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ABSTRACT

This document demonstrates the impact of systems analysis on functional job analysis for occupations in human services. The first section discusses the goals and components, and data analysis techniques of the systems approach. In the next section, systems analysis is applied to the tasks performed in a variety of human services occupations. These task descriptions are then regrouped into a career ladders model of social service occupations. The last section provides an evaluation of the usefulness of the systems approach to job analysis. Appendixes present sample job descriptions and core curricula for human services education. A related document is EA 003 979. (RA)

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A SYSTEMS APPROACH

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Introduction

The *Systems Approach*. is a method of creating and designing a system in order to achieve a specific result. *Functional Job Analysis* is a supportive technique of the Systems Approach which provides a method for planning right down to the bottom of the systems pyramid in order to allocate work, pinpoint responsibility, inventory activity, specify training, and produce the most stimulating and productive work atmosphere within the system. Both the Systems Approach and Functional Job Analysis will be described in detail. There will be some repetition of concepts and techniques throughout, but we feel this will not only aid the reader in following a complex subject, but will also help to emphasize those areas which are considered most important.

The reader will be provided with as much information as possible about the use of the methods described and whenever possible, we will try to acquaint the reader with the potential problems that may arise when attempts are made to develop core curricula and career ladders using the Systems Approach and Functional Job Analysis.

Our focus will be in the area of human services, not because these techniques apply exclusively to that domain, but because these techniques were the basic research and development tools of the Social Service Aide Project, which has provided the experience and the occasion for this discussion. In actual fact, these techniques grew out of the industrial labor situations attendant upon World War II, and subsequently have had their earliest and most consistent application in industry. The use of these techniques in the human services is new and very promising. We maintain that the process herein described for the human services can be used equally well and with considerable profit in any field, and in any academic or work environment that employs people or people analogues.

The Social Service Aide Project was established in Chicago in 1968 with instructions to do research in cooperation with human service agencies and community colleges and to develop and test model career ladders and a core curriculum in the human services. The Project was charged with discovering and documenting the problems and processes involved in the development of the models, as well as actually developing the models themselves. In addition, the Project was to evaluate the worth of the models and determine the value of the research itself. In all, not less than sixteen human service agenci college systems participated in t participant agencies and schools is co

What Is a System?

We might begin our quest for orthodox way, by consulting the would find a definition such as: A group of items forming a unified solar system or the human body. acceptable beginning to answering what a system really is. The clues *interdependent, group, unified,* and to a system, but they do not reve enough to distinguish it from othe by all or part of the same list of mo

We might try another approa all the various things which we hav Such a list might contain the follow

1. human body
2. a bird
3. an airplane
4. government
5. technique
6. solar system

Looking at our list, we discover tha are, apparently, systems; but what We might be driven to state that th the items are either structured syste both. Yet if we examined any of th find systematic organization and bel

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What Is a System?

We might begin our quest for the answer to this question in a very orthodox way, by consulting the nearest dictionary. In a dictionary we would find a definition such as: A regularly interacting or interdependent group of items forming a unified whole. Examples of this would be our solar system or the human body. While the dictionary definition is an acceptable beginning to answering the question, it provides only clues to what a system really is. The clues rest in words like *regularly*, *interacting*, *interdependent*, *group*, *unified*, and *whole*, all of which certainly do apply to a system, but they do not reveal the nature of a system specifically enough to distinguish it from other phenomena which may be described by all or part of the same list of modifiers.

We might try another approach to answering the question by listing all the various things which we have come to know and accept as systems. Such a list might contain the following:

1. human body
2. a bird
3. an airplane
4. government
5. technique
6. solar system
7. a body of teaching or practice
8. military unit
9. human society
10. an ant hill
11. a political party
12. a social service agency

Looking at our list, we discover that all manner of institutions and things are, apparently, systems; but what a system is remains somewhat illusive. We might be driven to state that the unifying factor in our list is that all the items are either structured systematically or function systematically or both. Yet if we examined any of those systems, we would be distressed to find systematic organization and behavior practically non-existent.

Having fished about for a time, trying to understand what a system is, we would finally be reduced to the tiresome business of thinking the matter through—unless we were fortunate enough to happen upon a previously prepared definition which seemed to answer our needs and

which we could examine by comparing it to our intuitive understanding and our itemized list of examples. In actual fact, there are previously prepared definitions equal to our needs and which will save us the bother of thinking overly much and tiring our minds. Yet, a little thought is not really fatiguing and may actually enhance understanding; so we shall approach the matter obliquely and see what we shall see.

A system has many characteristics. It has channels of feedback, monitoring, and control. It moves in a medium of resources and constraints against obstacles and with definite direction. It possesses both an outer awareness and an inner self-awareness. A system is at least analogically organic in that it has cause, order, movement, action, change, growth, and a capacity for death. A potential system is a design on paper supplying purposes, goals, objectives, directions, criteria, resources, constraints, and other environmental descriptions. A system must be specific and precise or else it is not a system. Considering all this, we can readily see why most governmental and legal structures cannot be considered systems. A kinetic system is more than a form or design, it is the real functioning parts and pieces at work, acting according to form and design.

If we were to be confronted with a system design, we would know it to be such only by subjecting the design to certain tests. As these tests determine the validity of the design they also serve to instruct us in the nature of a viable system. Each system design must contain within itself clearly indicated and specifically and unequivocally defined ends, classified as to whether they are *ultimate enas, intermediate ends,* or *immediate ends.* The ultimate ends are the system's *purpose*, the intermediate ends are its *goals*, and the immediate ends are its *objectives.* Mediacy may be determined as to time, resources, energy and power, space, desire, or size. As an example, the ultimate end of United States participation in World War II was primarily the defeat of specified enemies. Secondarily the ultimate end was to secure peace through the removal of causes of unrest, through the meeting of world needs, and by the creation of a world body for mediation and resolution. The intermediate ends, or goals, of U.S. involvement in the war were to win specific pieces of territory in battle, produce enough armaments, train and field enough personnel, create and maintain supply lines, destroy enemy productivity, destroy enemy supply, and so forth. The objectives were such things as drafting X number

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In general, any system's purpose will have several goals whose accomplishment as a collectivity would mean the accomplishment of the purpose. Each goal in turn would have more than one objective, organized so that by achieving all objectives, the goal would be attained. Naturally enough, each objective would have under it a sub-system, provided the system as a whole is of a high enough order and the objective of sufficient magnitude and complexity.

Within the statements of purpose, goals, and objectives, all words should be precise and specific, and each statement should clearly indicate three things: (1) direction (Toward what and along what path does the purpose, goal, or objective cause the system to move?); (2) criteria (How will the attainment of the purpose, goal, or objective be determined and evaluated?); (3) resources (Upon what resource will the attainment of the purpose, goal, or objective depend?). Each statement must also list and describe the constraints attendant upon the work of the system (upon the activity of attaining the goals, purpose, and objectives), the environment in which the system must operate, the points of evaluation, the mechanisms for feedback and control, and the means by which the system will maintain itself. Each of these factors will be discussed later, but for now, let it be understood that these elements constitute the measure of a system design's viability.

A system and subsystems may be created for almost any purpose. Without any encouragement from man, nature has been creating phenomenally sophisticated systems for eons, and these natural systems continue to evolve to ever greater heights of sophistication and complexity. Systems are not new. Indeed, systems as creations of men are not new, for we have had systems of mathematics and numerous machine analogues of animal entities for centuries. What is new is the focus and the consciousness of what we are doing when we create a system. What is new is the intricate procedure detailing how we may go about creating a system to remove error, cover all possibilities, and create true systems. What is

new is the understanding we have of what takes place within natural systems. Our increased awareness has led to the possibility of creating better systems and true systems, as opposed to some of our old hodge-podges which partake of both the properties of systems and the properties of chaos.

It must always be kept in mind that the idea of a system includes the idea of order, and particular order at that. All those factors which define a system also define the order present within the system. This order, and the defining properties of the system, had best be in keeping with sound logic and tested experience, or the system may either careen toward disaster and die, or turn into a huge clanking monster destined to consume and destroy itself and its makers. This cannot be stressed too much, for social, military, and scientific systems gone out of control have been a terrible plague in this century

If we think very carefully and very clearly, we discover that a system is systematic, but what is systematic may very well not be a system. Ideally, anything systematic either is or pertains to a system. But in actual practice, all we really mean by *systematic* is that there has been some attempt to establish a system, but that this attempt has either failed utterly or has only succeeded in enabling its authors to establish an arbitrary ordering of parts which can perform sequential activities or engage in classifying and sorting operations. We see these feeble, "systematic" structures and functions more often in the creations of men than of nature. Governmental and legal structures may be naively understood to be systems, but they are frequently not much more than systematic (and that, only by our loose rendering of the meaning of *systematic*).

Now, having seen what a system is not, we can begin to consider what a system is. A system is a means of ordering, classifying, and relating activities, causes, functions, relationships, things, orientations, ideas, plans, structures, and perhaps existences. A system is a means of producing purposeful, harmonious activity. A system is a means of producing, monitoring, governing, stimulating, and controlling growth and change. A system is a means of solving problems and of getting things done. A system is a means of establishing priorites, indicating sequences, inventorying items, and guaranteeing action. A system has segments which comprise it, which are coordinated in their activity, and which are interdependent, mutually supportive, stimulating. A system has their turn a hierarch accomplishment, criteria of

Preliminary Analysis an

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Purpose, Goals, and Objectives

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d in their activity, and which are interdependent,

mutually supportive, interacting, mutually aware, and mutually stimulating. A system has purposes, goals, and objectives which have in their turn a hierarchical relationship and a direction toward accomplishment, criteria of performance, and resources for supply.

Preliminary Analysis and Development of a Systems Approach

The systems approach to career advancement produces an effective method for manpower development. With only minor variation, the approach can be geared to attain almost any purpose demanding an analytical scheme. Derived from systems analysis, the approach is an organizational framework utilizing the basic rudiments of research, problem-solving, and control.

> "A systems approach focuses on the achievement of a specific purpose or goal simultaneously seeking (a) to organize the technology, manpower, and money within a specified time frame and (b) to respond to changes in the environment of the goal, including needs and values that are important in its achievement. In short, the systems approach originates in needs and values, focuses on a goal, responds to its environment, and presumes to measure progress towards the goal."[1]

The following variables determine the specific character of the systems approach to be utilized: the purpose; the external constraints or environment; the resources; the components or subsystems; and the maintenance and evaluation of the system. (See Chart A)

Purpose, Goals, and Objectives

The primary purpose dominates the entire system, from beginning stages to evaluation and completion. It is a statement of final attainment and is the foundation for planning the necessary activity to achieve the purpose. The system purpose concentrates all activities toward the achievement of specific tasks by deciding about priorities originating from the values and needs of the people developing the system and of those benefiting from the system's products.

Goals are determined after the system purpose has stated the end result or the desired condition. The goals are the sequential and developmental steps toward fulfilling the purpose. They label more

CHART A: Flow Chart – Summary of Systems Approach to Functional Task

I. Preliminary Analysis and Development of Systems Approach
   A. Purpose
   B. External Constraints or Environment
   C. Resources
   D. Components or Subsystems
   E. Maintenance and Evaluation of System

II. The Job Analysis Data S
   Social and Human Servi
   –Definition of Objectiv
   Scope of Preliminary An
   A. Data Collection Syste
      –definitions and stan
      task descriptions
   B. Coding Systems
   C. Sorting and Clusterin
      –edge-punched card

III. Analysis

A. Definition of Educational and Employment Objectives

V. Process of Regroupi
   Separate but Parallel

1. Career Ladders
   a. definition of Areas of Work
   b. task clustering
   c. career ladder formation
   d. job descriptions

IV. Assessment and Evaluation of the System
   –adherence to and the attainment of the Purpose; underlies criteria for assessment and evalu
   –possibility of implementing findings and models to make further evaluation in the light of educational and employment objectives

CHART A: Flow Chart – Summary of Systems Approach to Functional Task Analysis Data System

ysis and
Systems

straints or

or Subsystems
and Evaluation of

II. The Job Analysis Data System in the Social and Human Services
–Definition of Objectives within the Scope of Preliminary Analysis
A. Data Collection System
–definitions and standards of task descriptions
B. Coding Systems
C. Sorting and Clustering System
–edge-punched card/sort system

tion of Educational and
oyment Objectives

V. Process of Regrouping Tasks under Separate but Parallel Headings

1. Career Ladders
a. definition of Areas of Work
b. task clustering
c. career ladder formation
d. job descriptions

2. Core Curriculum
a. definitions of processes required to do the areas of work
b. definition of Areas of Knowledge (what one needs to know)
c. task clustering
d. contents outlined

ssment and Evaluation of the System
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ional and employment objectives

precisely the areas of attainment necessary within long-range time frames, a recognition of environment, expediency, efficiency, and desire.

Objectives are even more specific delineations of activity. They are logical extensions of each goal and are guided by the overall purpose. Within specific short-range time frames or other constraints, and within the specifications of the system purpose, the objectives are the steps for achieving goals.

The statements of purpose, goals, and objectives indicate the various stages of systems development and achievement. They necessitate adherence to schedules. Subsystems can be identified as a result of specifying purpose, goals, and objectives, as well as determining how the whole system fits within the frame of larger systems. Finally, the system purpose helps determine criteria for continual readjustments and refinement, and evaluation of degree of success.

The importance of clear and concise statements of purpose, goals, and objectives cannot be overestimated. Because these statements are the bases for operation, they should not be obscure, should consist of coherent steps, and should be the objects of constant referral and scrutiny within all system operations.

External Constraints or Environment

> "Systems are accomplished in environments, i.e., in a world of other ongoing, competing systems. . . .Human service systems must deal with such realities in the environment as geographic areas, time periods, budgets, size of populations, and available manpower. In effect, when you explore the environment in which you propose to pursue a purpose, you are determining the boundary conditions—the constraints—the limitations in relation to which your system must be implemented. . . .Positively stated as objectives, the constraints become the criteria against which to measure progress in achieving the purpose."[2]

Within these constraints arises the confrontation between projected ideal and reality, between original purpose and final fulfillment. System objectives are derived from this opposition and are fruitful in that they specify the immediate result to be accomplished by defining "(1) a period of time, (2) a budget, (3) manpower supply, (4) place, and (5) client population."[3] Within the scope of the system purpose, objectives define measureable short-range outcom achievement and evaluation.

Resources

The systems purpose is deriv focused in its scope when placed Implementing the system necessita available, the means for efficient in intermediate objectives. If the was not broad enough. Intermedi the specific means of attaining th enough to operate within the cons

Components or Subsystems

> "Most systems are really subs system purpose, we need to co of the system. This is necessa manner; that is to make sur component elements of the sy minimization of random activi purpose, usually a whole serie Many different activities mu precisely in order for the obje

A subsystem is a replication of smaller, and more specific scale. be an objective of the system of many subsystems, and if the leve these subsystems may in turn matter how extended the system close connection between all unit of communication and feedback.

Human services manpowe activities dispersed through just a offices. In order to achieve a p resources and opportunities instruments, components, and synchronized with the whole syst

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onstraints arises the confrontation between projected ideal etween original purpose and final fulfillment. System derived from this opposition and are fruitful in that they nediate result to be accomplished by defining "(1) a period budget, (3) manpower supply, (4) place, and (5) client Within the scope of the system purpose, objectives define measureable short-range outcomes that have their own criteria for achievement and evaluation.

Resources

The systems purpose is derived from values and needs and becomes focused in its scope when placed in the context of a specific environment. Implementing the system necessitates a knowledge of the technical options available, the means for efficient operation, and the possibility of changes in intermediate objectives. If the overall purpose must be changed, then it was not broad enough. Intermediate goals and objectives should indicate the specific means of attaining the system purpose and should be flexible enough to operate within the constraints of environment and resources.

Components or Subsystems

> "Most systems are really subsystems. Therefore, in carrying out a system purpose, we need to consider the purpose of each component of the system. This is necessary to organize activity in an effective manner; that is to make sure that there is effective meshing of component elements of the system on one hand and that there is a minimization of random activity on the other. In order to achieve a purpose, usually a whole series of events must be coordinated . . . Many different activities must be concurrent and synchronized precisely in order for the objectives of the system to be realized."[4]

A subsystem is a replication of the form of a system but on a lower, smaller, and more specific scale. The purpose of a subsystem may actually be an objective of the system of which it is a part. Any system may have many subsystems, and if the level of the primary system is large enough, these subsystems may in turn have subordinate tertiary systems. No matter how extended the system becomes, there should continue to be a close connection between all units of the system, with a continuous flow of communication and feedback.

Human services manpower development contains many kinds of activities dispersed through just as many kinds of agencies, institutes, and offices. In order to achieve a purpose within the confines of available resources and opportunities, the subsystems, the various steps, instruments, components, and dependencies, must be analyzed and synchronized with the whole system.

Maintenance and Evaluation of the System

Maintenance concerns itself with controlling the progress and growth of the system as it functions. Evaluation is a built-in testing device to measure the success or failure of the system in attaining its purpose. If the proper maintenance is applied throughout the functioning of the system, the success of the approach is usually assured. Feedback, redundancy, and system correction are only three of the many aspects important in maintenance.

> "Feedback is concerned with designing the system so that at critical points in the system, for example, where the output of one subsystem is the input of another–there are controls which quickly tell you that the system is doing what it is supposed to do.... Redundancy provides back-up at critical points so that the system can keep going. It is especially important in a highly institutionalized society such as ours that redundancy of manpower for direction of human services be a considered, integral part of the system and regarded as an essential cost.... System correction is also essential to provide periodic review of performance in order that the system can be revised and brought up to date.... By their nature, all systems, in both hardware and human services, start to obsolesce the moment they are born."[5]

A system should not be evaluated a failure because it may have undergone drastic changes due to careful maintenance. If the purpose is achieved within all the attainable resources and subsystems, then the total system can be deemed a success, no matter how many changes of form the system might undergo.

The Job Analysis Data System in the Social and Human Services

The purpose of the job analysis data system in social and human services is to structure the planning, functioning, and production of career advancement programs for successful achievement of their individual purposes. The process of system development just described, results in the following immediate products for the program: (1) definition of overall purpose and goals of the program and ability to measure progress toward these specific ends (definition of exactly what kind of human services advancement is desired); (2) realistic assessment of what can be done (the immediate objectives within time, resource, and manpower constraints);

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The data system (number three above) controls the parallel development of a core curriculum model and a career ladder model. Although uniquely separate, they work together to become a total career advancement program that utilizes both educational and employment objectives. For instance, the goals of CORD have been: (1) to use job analysis techniques to identify the nature and scope of job tasks and physical, mental, and interpersonal job skills; (2) to organize tasks and skills into a career sequence or hierarchy of jobs with increasing responsibility and compensation; (3) to articulate secondary, post-secondary, and higher education programs (model curricula) which will qualify students and workers for paraprofessional jobs and for advancement commensurate with their ability, education, and experience.

Job analysis was fundamental to CORD's career advancement program. Looking for new ways to organize and implement both educational and employment objectives, CORD found that job analysis went right to the heart of the problem by exposing the inequities of the jobs themselves.

The environment of the job analysis data system encompasses all the conditions, values, and purposes that are outside the system and which operate as either constraints or resources for the achievement of purposes. Some of the constraining factors are money, time, manpower, political considerations, and anything else indicated by the system purpose, goals, and objectives.

The immediate objectives of the system are derived from a realistic assessment of purpose, goals, constraints, and resources, and describe the sequential products which come together as the steps to the final achievement of system purpose. For example, CORD's immediate objectives during Phase I (1968-1969) were:

1. to secure the cooperation of a select number of social and human services agencies in the Chicago area to allow data collection;
2. to elicit the cooperation of the following Chicago-area community colleges whose teachers would interview workers, collect data, and act as consultants: Chicago City Colleges, Thornton Community College, Prairie State College, and

Central YMCA College;

3. to collect, code, and sort as many task descriptions as needed of jobs currently being done by workers in the cooperating social and human services agencies;
4. to regroup collected and analyzed job data to parallel employment (career ladder) and educational (core curriculum) objectives;
5. to complete a career ladder model that is a graded sequence of tasks grouped according to areas of work, complexity, and the needs of clients;
6. to outline a core curriculum derived from the graded sequence of tasks grouped according to areas of knowledge, complexity, and kinds of actions and processes needed to do the tasks.

Securing the cooperation of agencies and schools is a necessary function but will not be described further here. As a procedural aid, specific subsystems can be recognized within the objectives and become a part of the analyzing mechanism. Subsystems are those fundamental processes that are linked together by the purposes, goals, and objectives, and that comprise the basic moving parts of the whole system. Within these many subsystems, maintenance as a constant and daily check becomes necessary. Where one or more aspects of a sub-system become incompatible, those aspects must be changed.

Data Collection System

The basic data for job analysis are the task descriptions collected through a process of interviewing human and social service workers in existing jobs and listing specific tasks that are performed. A task is a single, whole unit of activity that is directed toward some specific end which a worker is employed to accomplish. A task description is the process of that unit of activity, written so as to describe what is done and towards what ends. It differs from a job description in that a group of generally related task descriptions can make up a job description. A single task is not the whole job.

Collecting the tasks performed by present human and social service workers serves at least two purposes: (1) it allows the researcher to see exactly what lies behind the job and its title; (2) it opens the once rigid job to change and restructuring where necessary. Because the task description

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following are necessary standard

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ing where necessary. Because the task description is one of the bases for further analysis and conclusions, it must be written succinctly and well, always keeping the later analysis in mind. The following are necessary standards for writing good task descriptions:

1. A task description must state exactly what action is being performed to whom or what, how the action is being performed, and to what end, so that anyone reading it can comprehend the motions.
2. A task description must be both coherent and discrete. It must be indicative of the worker's job and be related to the goals of the agency. It cannot describe more than one action being performed.
3. The task description must show the distinction between what gets done and what the worker does. An intake interview of a client is something that gets accomplished, but the interviewer does a variety of tasks to accomplish it.
4. A task description must state in clear, precise language what is being done, by what subject (though this may be understood), to what object, for what reason, utilizing what special skills or tools, and under whose instructions. (e.g., Talks to the client in order to obtain basic information such as name, address, age, and marital status–utilizing agency interview forms under the directiion of unit supervisor.) Frequently, the task will be written without stating under whose instruction, if this is understood or otherwise provided for, and when no special tools or skills are used, the clause which would refer to such will be absent.
5. A task description must be stated so as not to represent either an over-analysed or an under-analysed task. If several different operations are masked by the task description, then it is under-analysed. If an operation is described as separate, smaller components which cannot be conveniently separated or sensibly distributed amongst more than one person, then the task may be over-analysed.

Proper task description. (1) Get the client's phone number from the file in order to facilitate the placing of an interview call. (2) Phones the client in order to make contact and facilitate the basic information

interview. (3) Talks to the client in order to obtain basic family and employment information (such as age, marital status, number of children, and nature of last job).

Under-analysed task description.. (1) Interviews client in order to obtain familial and employment information.

Over-analysed task description. (1) Walks to the file where client's phone number is kept. (2) Searches file in order to find client's phone number. (3) Copies phone number in order to remember it for phone call. (4) Walks from the file in order to reach phone. (5) Lifts receiver. . .(See Appendix A for further examples of task descriptions).

The language used within a task description or a total system design is of the utmost importance. Only words with specific, accurate, and precise meanings should be used and jargon should be avoided unless necessary for specificity or precision. If the language is specific, then that which is being described will be clearly delimited. If the language is accurate, then it will be free from error and what is said will be what is meant. If the language is precise, then what is being spoken of will be exactly stated, defined, and understood. No confusion should ever occur when specific, accurate, and precise terminology is used. Great care must be exercised, because we frequently use language which actually conveys multiple meanings, thus leaving everyone free to draw his own interpretation. ("Helps the client overcome his difficulties." *Helps, overcome,* and *difficulties* are all ambiguous words.) The problem of misunderstanding is that we not only do not share a common interpretation, but we don't know that we don't, and we may never discover the problem.

Coding Systems

Continuously dealing with thousands of task descriptions makes job analysis an almost impossibly wordy job. Coding systems transfer onto numerical or letter scales the degree of complexity, the level of training, the areas of knowledge, and the areas of work that the tasks describe. This makes the sorting and shuffling of tasks a matter of locating and identifying numbers instead of whole sentences.

Codes and scales are derived from an analysis of ways, levels, and characteristics of knowing and doing. The scales can be used to code any task in any job because knowing and doing are basic to any accomplishment. When tasks are rated according to scales, it is important

3) Talks to the client in order to obtain basic family and information (such as age, marital status, number of children, f last job).

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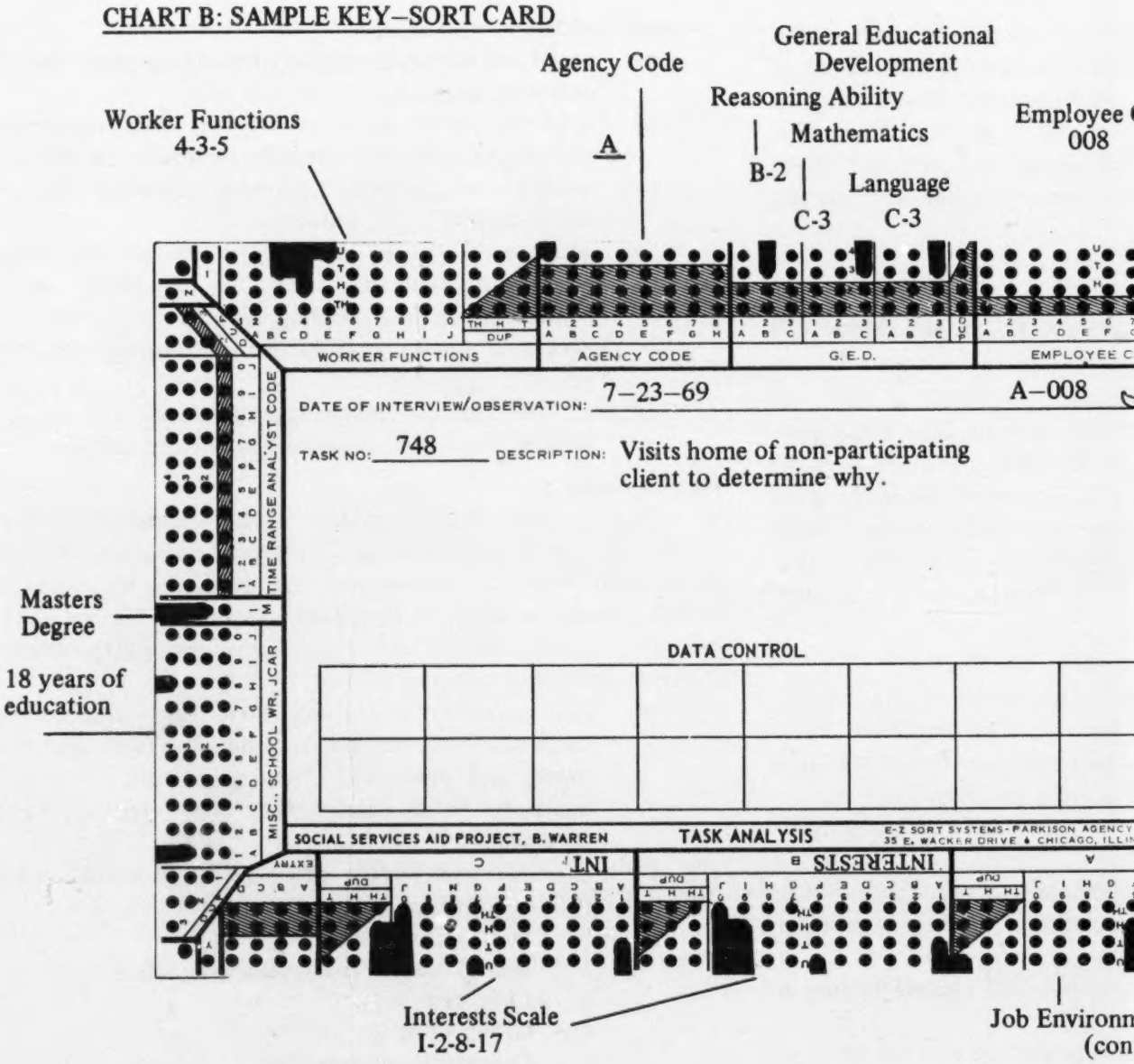
The Scales used by CORD are preliminary modifications of scales developed under the direction of Dr. Sidney A. Fine while he was a director of research with the United States Employment Service. Those scales were originally developed for industrial use and later modified for use in personnel management. The scales were modified to render them more applicable to human service fields. Many problems are encountered when using scales in human service fields. Difficulty with scale terminology represents one serious problem, since those who use the scales frequently react negatively to word specifications on the scale intervals. They either feel that different terms should be used, or by reason of prejudice, feel that more virtue and personal worth inheres in some scale intervals than in others. This latter fact promotes confusion between tasks and persons performing tasks. Also scales cannot indicate multiple function within any scale category, as when, on the People Scale, a particular task represents both interviewing and instruction. Additional intervals were added to Dr. Fine's scales in an effort to deal with the specific problems which arose from their application to human service situations.

Sorting and Clustering Systems

The sorting and clustering systems are the mechanical processes of categorizing coded tasks into the same or similar levels of classification, much like sorting and grouping stones according to objective criteria of weight, color, size, and cost. Sorting is a process of separating one set of coded tasks from another. This can be done manually or by mechanical card sort. (Chart B shows one card coded to the scales described in Appendix B.) Clustering is the process of bringing together similarly coded tasks in specific areas designated by the desired goal of the subsystem. Regrouping is the process of selecting and redistributing clustered tasks into areas of work (occupational fields) and areas of knowledge (what neets to be known in order to do the tasks).

Tasks sorted according to degree of complexity, level of training, and areas of work tend to cluster as gradations of a slowly emerging career

CHART B: SAMPLE KEY–SORT CARD



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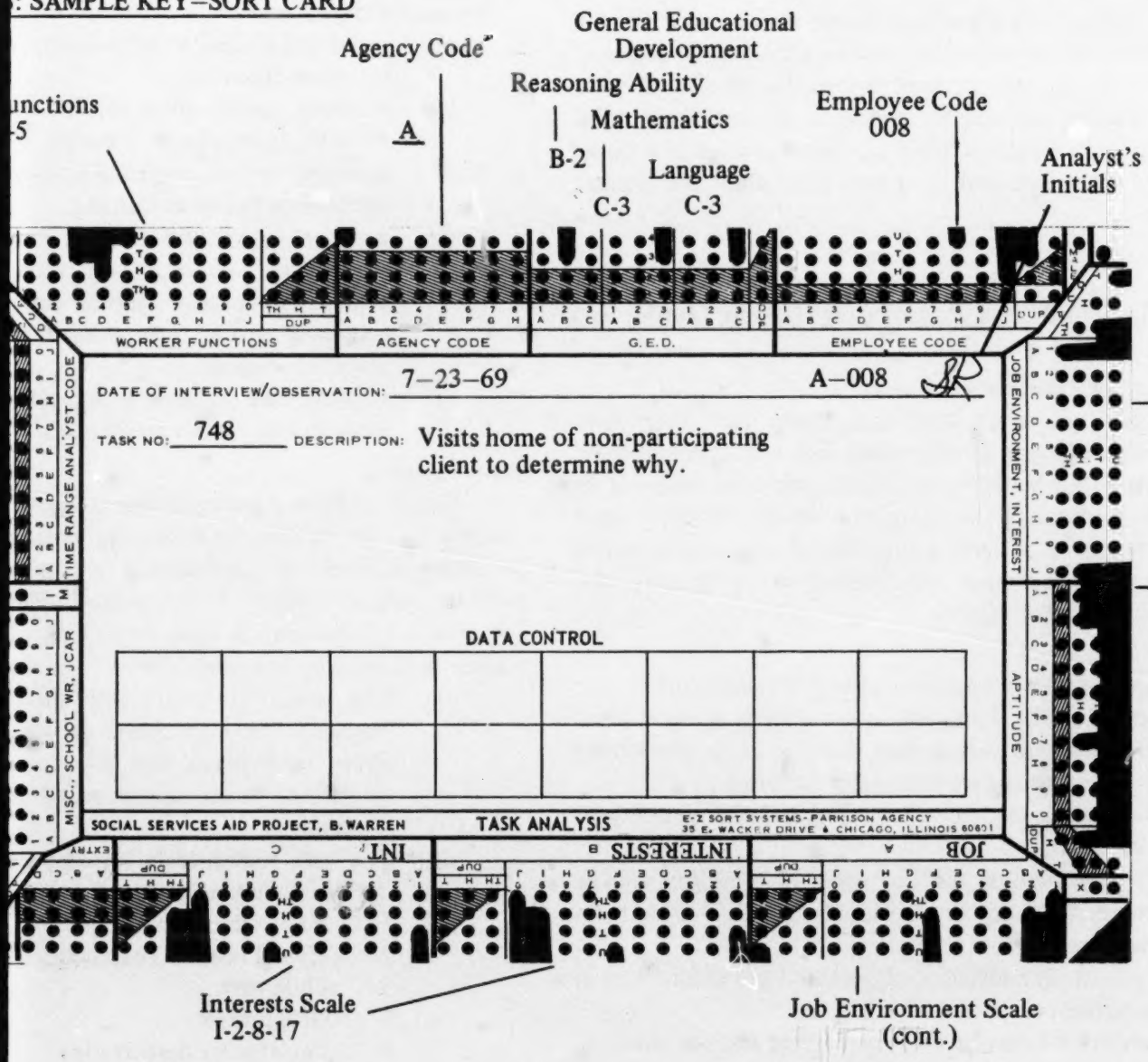

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ladder sequence. The task and its characteristics can then be coupled with levels of work and their requirements. Tasks sorted according to degree of complexity, level of training, and areas of knowledge cluster so as to indicate the kinds of training and courses needed to perform those tasks. Regrouping clusters of tasks results in both job descriptions and a career ladder with one set of objectives, and in a core curriculum and training sequences with another.

Analysis of Definitions and Task Regrouping: Career Ladder and Core Curriculum

Definitions of Employment and Educational Objectives

CORD'S goals, as listed in the preceding section, have taken into account educational and employment objectives. The attainment of these objectives is not primarily in the control of CORD within the design of its own systems approach. Because of the many components involved, these objectives can only be met by a coming together of all the responsible agencies, institutions, organizations, and individuals to specify the necessary steps toward their achievement.

Employment Objectives

a) greater opportunities to acquire, retain, and grow in jobs;
b) salaries commensurate with skills and the kinds of work done;
c) carefully designed job descriptions that honestly relate on a one-to-one basis with the work actually performed;
d) implemented career ladders for all workers, with mobility in all growth directions;
e) employer recognition of the potentials of paraprofessionals and indigenous social and human services workers to perform high-level tasks required of them;
f) employee growth in realization of potential and satisfaction in the work situation;
g) greater correlation between work performed and the needs of the client population;
h) advancement based on workers' competency to perform tasks within standards of performance, and worker review related to joint worker-employer objectives.

Educational Objectives

a) social and human services c
real work situations;
b) academic credit given for
extra to, or commensurate w
c) academic recognition of AA
institutions of higher learnin
d) greater cooperation be
administrators and curr
administrators and fundin
released time, coopera
practicum courses;
e) a basic core curriculum fo
workers with credits transfe

Task Regrouping

Career Ladder: A career ladder is
starting at the trainee level and pr
technologist levels to professional jo
worker's ease of mobility from one lev
job area to another on the same level.
CORD in developing its career ladder:

a) Task inventory sheets with
prepared. These ultimately
above, and below the AA
transferred to the edge-pun
clustering.
b) The tasks were loosely sort
into the following groups:
1. Supportive administra
2. Mental health–Therap
3. Child care
4. Group work
5. Community organizat
6. Informal counseling (i
7. Teaching arts and craf
8. Resolution of intergr
9. Community relations

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rformance, and worker review related to
objectives.

Educational Objectives

a) social and human services courses that prepare the worker for real work situations;
b) academic credit given for life and work experience, either extra to, or commensurate with, regular course work;
c) academic recognition of AA level education and training by institutions of higher learning;
d) greater cooperation between college and high school administrators and curriculum developers with agency administrators and funding sources for in-service training, released time, cooperative work-study situations, and practicum courses;
e) a basic core curriculum for all human and social services workers with credits transferable to other colleges.

Task Regrouping

Career Ladder: A career ladder is a graded sequence of job positions starting at the trainee level and progressing through technician and technologist levels to professional job positions. Its hallmark is the worker's ease of mobility from one level to the next, as well as from one job area to another on the same level. The following steps were taken by CORD in developing its career ladder:

a) Task inventory sheets with their coded classifications were prepared. These ultimately listed all task descriptions on, above, and below the AA degree level. These were later transferred to the edge-punched card-storage system for quick clustering.
b) The tasks were loosely sorted on the basis of knowledge areas into the following groups:
    1. Supportive administration
    2. Mental health–Therapeutic counseling
    3. Child care
    4. Group work
    5. Community organization
    6. Informal counseling (includes interviewing)
    7. Teaching arts and crafts
    8. Resolution of intergroup conflicts
    9. Community relations

10. Tutoring
11. Physical therapy
12. Orientation

c) Definitions were supplied for the above areas of work. (For example: Informal counseling–initial and supportive role to enable individual to solve educational, vocational, physical or mental health, economic, or lega! problems.)

d) The areas of work were reduced to eight occupational fields, each distinct, but not separate from the others. These eight areas represent a realistic adaptation of the system goals to constraints on the system. The following list includes the knowledge areas in the grouping above, and also describes coherent job areas as presently found.
   1. Social service administration
   2. Mental health
   3. Health service
   4. Child care
   5. Community organization
   6. Social case work
   7. Group work
   8. Teaching

e) The development scheme calls for six steps in the career ladder, from trainee to professional, because upper and lower limits were implied in the development of a ladder by the low educational trainee level and the existing four-year BA or BS degree level. Paralleling two of these steps, a core curriculum was developed for aiding those who desire to advance on the ladder to the next level by acquiring the necessary knowledge and skill. Parelleling the upper areas is the four-year BA or BS degree curriculum in human and social services and the subsequent graduate degree programs. The characteristics of CORD's career ladder model include the following:
   1. Entry into the human services career ladder is based on a combination of competency, training, and education, not only at the trainee level. Career entry is available on all levels.
   2. Trainees comi
      high school e
      begin a job a
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   3. Accreditation
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      equivalency e
      variety of mea
   4. For every cor
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      determined b
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f) The job tasks were
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g) Job descriptions w
   occupational fields.
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Core Curriculum: As a
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Tutoring
Physical therapy
Orientation

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Entry into the human services career ladder is based on a combination of competency, training, and education, not only at the trainee level. Career entry is available on all levels.

2. Trainees coming into the career ladder having less than a high school education or equivalency examination can begin a job and continue in his education and training for both upward and lateral mobility.
3. Accreditation of life and work experience by both agencies and educational institutions, along with various equivalency examinations, allows for mobility by a variety of means.
4. For every completed year of either formal education or in-service training and life or work experience determined by equivalency examination, the human services worker can be recognized for his increased abilities and move up or out of the career ladder.

f) The job tasks were distributed throughout the six sections of the career ladder based on (1) the eight occupational fields, (2) the sorting within the coded classifications, and (3) the levels of skill and knowledge required to perform the work, ranging from zero at trainee to high-level specialization at the fourth year of college and beyond.

g) Job descriptions were written for five levels within the eight occupational fields. The task cluster and their sequence in the career ladder became the basis of the descriptions. (See Chart C for the Phase I Career Ladder Model.)

Core Curriculum: As a sequence of related courses, the core curriculum is the basic working knowledge and skills by which a worker's desired advancement is possible. The social and human services core curriculum developed by CORD is comprehensive as a basis for almost any future career. Although accented for the human and social services, the core curriculum includes material that is essential to all fields of people-oriented work. Being a derivative of task analysis, the core curriculum is unique in that it is directly related to and is a consequence of work presently being done. It prepares the human services worker more adequately than in-service training can, for any further work in the social and human services, from trainee-level jobs to specialist areas.

A core curriculum is necessary because it represents the best means of providing the academic component of a human service worker's education, while at the same time providing him with a background that

CHART C: PHASE I MODEL OF HUMAN SERVICES

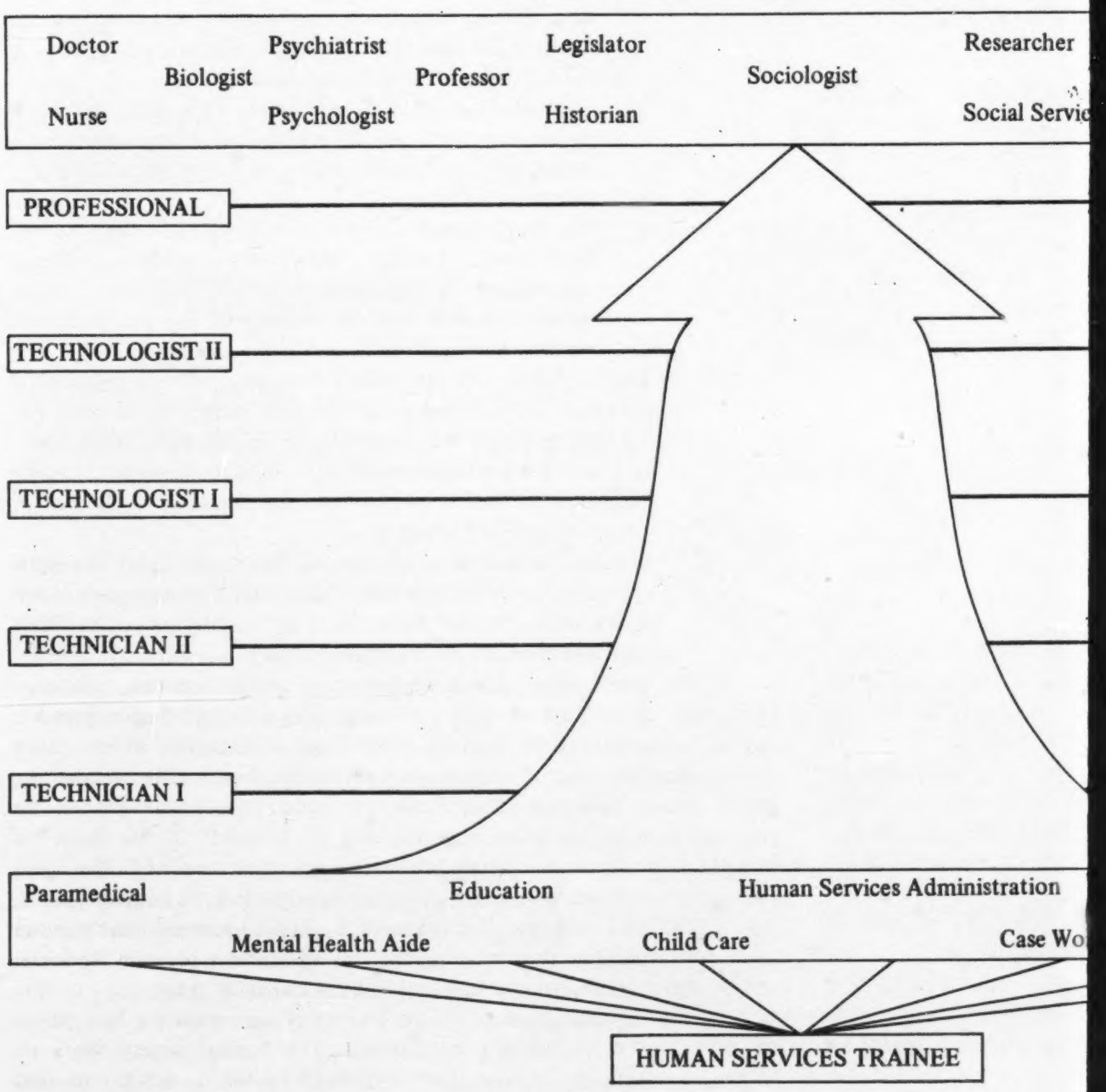
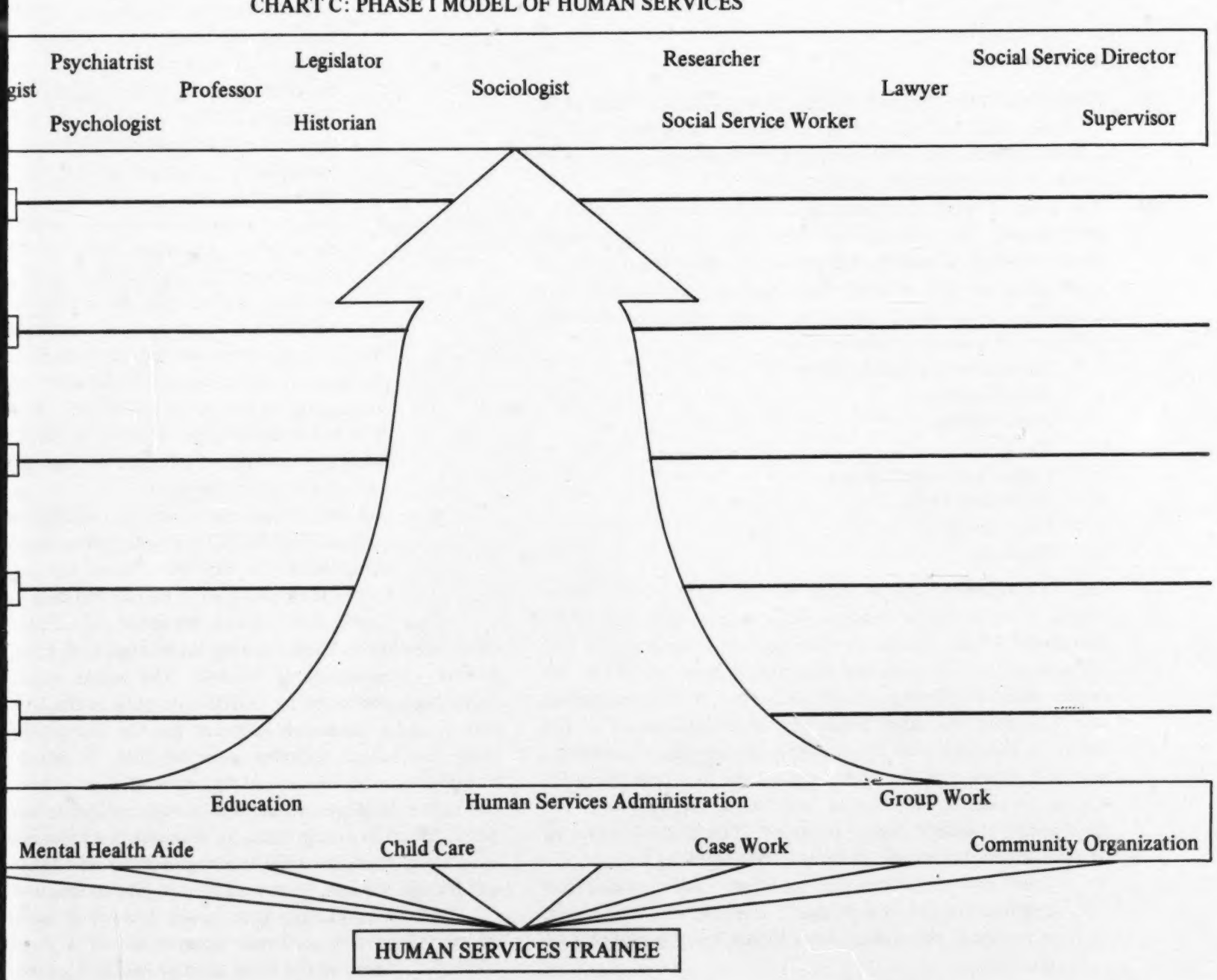


CHART C: PHASE I MODEL OF HUMAN SERVICES



guarantees horizontal as well as vertical mobility. A core curriculum is core because it is flexible and prepares the worker for many different human services fields at the same time with only few additional courses being required. Since each core course covers a particular area of knowledge and skills not covered by any other, each course is essential to the whole curriculum. Related skills and subject topics are grouped into a single course, avoiding unnecessary redundancy. However, the core as developed in Phase I, was primarily a model whose outlines needed to be expanded in Phase II into fully documented syllabi. Changes are inevitable within the pressures and confines of resources and constraints. Thus, the following steps were taken by CORD in Phase I to structure a core curricuculum outline:

a) Each task was listed and from the task statement it was possible to draw general and specific performance standards. The general performance standards represented qualities which must be possessed in order to guarantee adequate performance of the task. The specific performance standards represent quantified and real standards which are necessary to the task's performance. (e.g., General performance standards: politeness, neatness, patience, empathetic nature, imaginativeness. Specific performance standards: must type 70 words/minute, must have driver's license, must know how to use Xerox, must be able to use agency interview forms.)

b) From the task statements and performance standards, it was possible to identify the general and specific knowledge and training components which had to be provided in order to assure that the task would be performed up to the established objective standard. From the general knowledge components of the tasks, it was possible to draw the material which would best be taught by a school, while from the specific components, it was possible to specify in-service training.

c) Rating each task on the various scales helped to indicate at what level the educational and in-service components should be taught and where the stresses should be placed.

CORD then assembled this disorganized body of information into particular courses for a core curriculum outline in the following manner:

a) The tasks, distri
above, were exa
what was neede
Informal counseli
(2) help resolve
amount of follow

b) Areas of knowle
For example, th
Counseling were:

1. How to mak
2. How to liste
3. How to ask
4. How to esta
5. Significance
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8. Necessity of
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zontal as well as vertical mobility. A core curriculum is core exible and prepares the worker for many different human at the same time with only few additional courses being each core course covers a particular area of knowledge and red by any other, each course is essential to the whole lated skills and subject topics are grouped into a single g unnecessary redundancy. However, the core as developed primarily a model whose outlines needed to be expanded in ully documented syllabi. Changes are inevitable within the confines of resources and constraints. Thus, the following en by CORD in Phase I to structure a core curricuculum

h task was listed and from the task statement it was sible to draw general and specific performance standards. e general performance standards represented qualities which st be possessed in order to guarantee adequate performance the task. The specific performance standards represent ntified and real standards which are necessary to the task's formance. (e.g., General performance standards: politeness, atness, patience, empathetic nature, imaginativeness. cific performance standards: must type 70 words/minute, st have driver's license, must know how to use Xerox, must able to use agency interview forms.)

m the task statements and performance standards, it was sible to identify the general and specific knowledge and ning components which had to be provided in order to re that the task would be performed up to the established ective standard. From the general knowledge components he tasks, it was possible to draw the material which would t be taught by a school, while from the specific nponents, it was possible to specify in-service training.

ing each task on the various scales helped to indicate at at level the educational and in-service components should taught and where the stresses should be placed.

en assembled this disorganized body of information into ses for a core curriculum outline in the following manner:

a) The tasks, distributed into the twelve areas of work listed above, were examined to identify the process performed, or what was needed to be done to complete the task (e.g., Informal counseling: interviewing to (1) identify the problem; (2) help resolve the problem; and (3) determine necessary amount of follow-up).

b) Areas of knowledge were identified from the task processes. For example, the knowledge areas necessary for Informal Counseling were:

1. How to make the client comfortable
2. How to listen for moods and attitudes
3. How to ask questions
4. How to establish empathy
5. Significance of non-verbal cmmmunication
6. How to recognize emergencies or potential crises
7. How, when, where to make referrals
8. Necessity of confidentiality
9. How to terminate the session.

c) Areas of knowledge were sorted and compared to remove duplications so that common areas would be obtainable from one course.

d) With removal of duplications, the areas were grouped according to their relatedness and complexity.

e) With the necessary accommodations for the time required to deliver the course, and some considerations of course sequences, the grouped areas were regarded as representing courses in the core curriculum.

f) Course contents were outlined.

g) Courses and scheduling were adjusted to account for necessary sequences of courses, the requirements of the career ladders, and credit requirements of schools for transferability. The first year of the core curriculum would supply the necessary knowledge and skills to enable a trainee to progress upward on the career ladder to the level of a human services technician. The second year of the core curriculum would supply the necessary knowledge and skills to enable the worker to move

into the next higher technician and technologist levels. (See Appendix E for the Core Curriculum Schedule of Courses.)

Assessment and Evaluation of the System

Any final assessment and evaluation of the systems approach depends largely upon these questions: Was the sytems purpose achieved? Why or why not? The systems approach, being a structure primarily designed to achieve a stated end, must be evaluated on the basis of that achievement. CORD completed Phase I, having attained its objectives, and advanced toward fulfillment of its goals and purpose. Some scheduled deadlines for subsystem completion were broken, necessitating revisions of schedule, changes of objectives, and re-analysis of basic coding systems. The problems encountered were generally ones of human relations, training of interviewers, and revising aspects of the coding systems.

Human relations problems stemmed from the bringing together of many people whose attidtudes, educational backgrounds, emotional stability, and occupational fields sometimes conflicted. Cooperation towards a mutual goal was to be the major bargaining point, to which the majority adhered. The problem of working together towards a mutually satisfactory goal must be incorporated into the initial systems approach planning stage. After CORD's first year, human relations problem solving has become an integral part of any further system planning.

Athough CORD did involve the interviewers in some data collection and coding training, the analytical nature of the process of interviewing, of the coding systems, and of the process of writing task descriptions tended to be an obstacle. The coding systems proved to be a stumbling block for some, because the codes began to be used for judging or rating the individual doing the task rather than the task itself. A code rates the task as described within a specific range of complexity of kinds of actions; it does not judge the person who does the task, nor does it rate that person as being in any way inferior or superior to any other person. Along the same lines, a task description is as objective a statement of an activity as can be written, if the standards are followed. However, some task descriptions did not adhere to the qualities of good writing listed earlier, and had to be re-written before coding could be accomplished. In future planning, the training of interviewers and data collectors must be comprehensive enough for a thorough acquaintance with all the objective

analytical definitions and standa
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Coding systems revision w
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services. Where the code inadequa
represented by the tasks, the sc
were made.

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Chart D also relates career levels
with people, data, and things.)

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Coding systems revision was an on-going process which involved continuous feedback by the program staff on their progress. Where codes were irrelevant to the tasks being done, they were changed or dropped to accomodate the widest possible variety within the social and human services. Where the code inadequately represented the diversity of levels as represented by the tasks, the scales were extended or new sub-divisions were made.

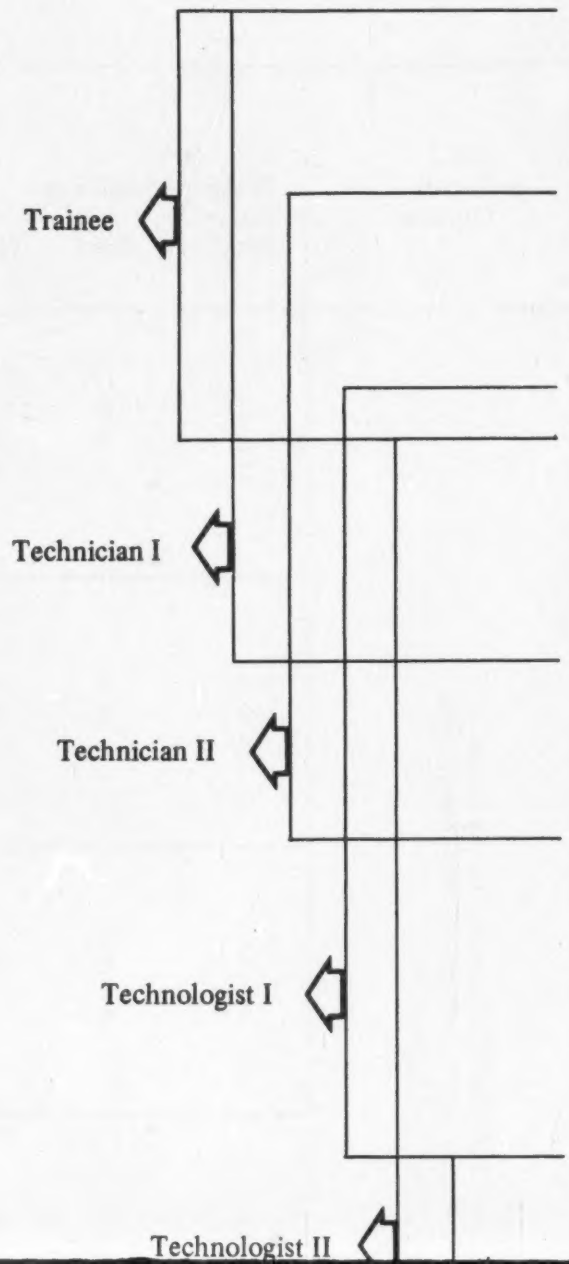
As a very flexible instrument on the track of an overall purpose, the systems approach achieves its ends, measures its progress toward those ends, and allows alteration where constraints are not synchronized with resources. Any further evaluation of the system products (career ladder and core curriculum models) can best be made through demonstration of the models' viability within real job and school situations. The fact that the models can be implemented within academic institutions and social and human service agencies is the best indication that the employment and educational objectives have been achieved. Thus, CORD's second and third phases, involved the extended evaluative and maintenance aspects of putting the career ladder and core curriculum to work. (See Chart D for the revised Career Ladder, applicable to almost every human service area. Chart D also relates career levels with the degree of on-the-job involvement with people, data, and things.)

CHART D: PHASE II MODEL HUMAN SERVICES CAREER LADDER

Technologist II Bachelor's degree	5 yrs of progressive experience with Equivalency Examination	Any combination of (A) and (B) to ascend career ladder with least time and expense, and to achieve the most comprehensive knowledge, skills, and know-how.	1 2 3	1 2	1 2
Technologist I 3rd yr. College Certificate	4 yrs of progressive experience with Equivalency Examination		2 3 4	2 3 4	2 3
Technician II Associate in Arts degree	3 yrs of progressive experience with Equivalency Examination		3 4 5	3 4 5	3 4
Technician I 1st yr. College Certificate	2 yrs of progressive experience with Equivalency Examination		4 5 6	4 5	4 5
Trainee High School or less	1 yr of training before taking Qualifying Examination for Technician I position.		5 6 7 8	5 6	5

CHART D: PHASE II MODEL HUMAN SERVICES CAREER LADDER

(A) Occupational Status and Education	(B) Life/Work Experience	(C) Career Options	(D) Range of Significant Functions People	Data	Things
Professional Doctor's degree Master's degree	6 yrs of progressive experience with Equivalency Examination	Any combination of (A) and (B) to ascend career ladder with least time and expense, and to achieve the most comprehensive knowledge, skills, and know-how.	0 1 2	0 1 2	0 1 2
Technologist II Bachelor's degree	5 yrs of progressive experience with Equivalency Examination		1 2 3	1 2	1 2
Technologist I 3rd yr. College Certificate	4 yrs of progressive experience with Equivalency Examination		2 3 4	2 3 4	2 3
Technician II Associate in Arts degree	3 yrs of progressive experience with Equivalency Examination		3 4 5	3 4 5	3 4
Technician I 1st yr. College Certificate	2 yrs of progressive experience with Equivalency Examination		4 5 6	4 5	4 5



12 Helping: Attending to the work assignment, instruction, or orders of supervisor. Helping applies to "non-learning" helpers. No immediate response required.

11 Serving: Attending to the needs or requests of people. Also, to the expressed or implicit wishes of people. Immediate response.

10 Persuading: Influencing others in favor of an object, service, or point of view.

9 Diverting: Amusing others.

8 Checking: Following-up operations, frequently routine, for purposes of ascertaining information about the delivery of goods or services, the functioning of people, or the performance of operation.

7 Observing-Listening: Sitting or being with another person to watch events for purposes of administration of assistance, acquisition of data, or to provide company and understanding.

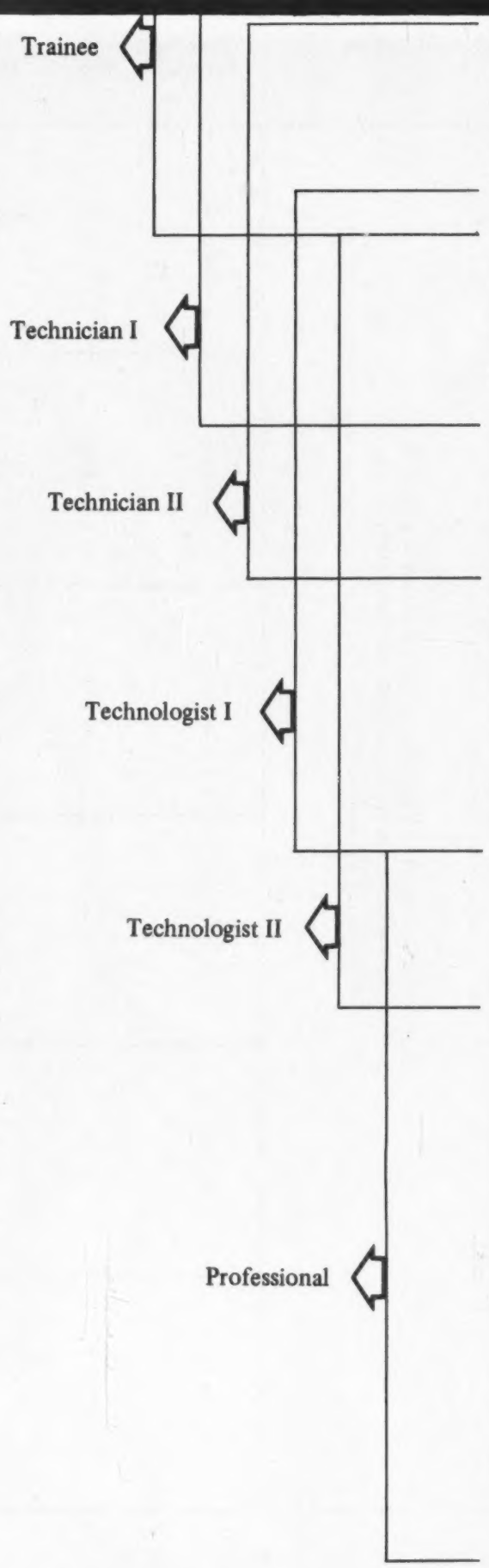
6 Arranging: Bringing together the necessary ingredients in terms of people, situations, and things to facilitate activities, developments, and interaction.

5 Interviewing: Talking or otherwise communicating with others for the purpose of extracting information or evaluating a particular or generalized circumstance.

4 Supervising: Determining and interpreting work procedures for a group of workers, assigned specific

CHART D 1: FUNCTIONS RELATING TO PEOP

CHART D 1: FUNCTIONS RELATING TO PEOPLE



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6 Arranging: Bringing together the necessary ingredients in terms of people, situations, and things to facilitate activities, developments, and interaction.

5 Interviewing: Talking or otherwise communicating, with others for the purpose of extracting information or evaluating a particular or generalized circumstance.

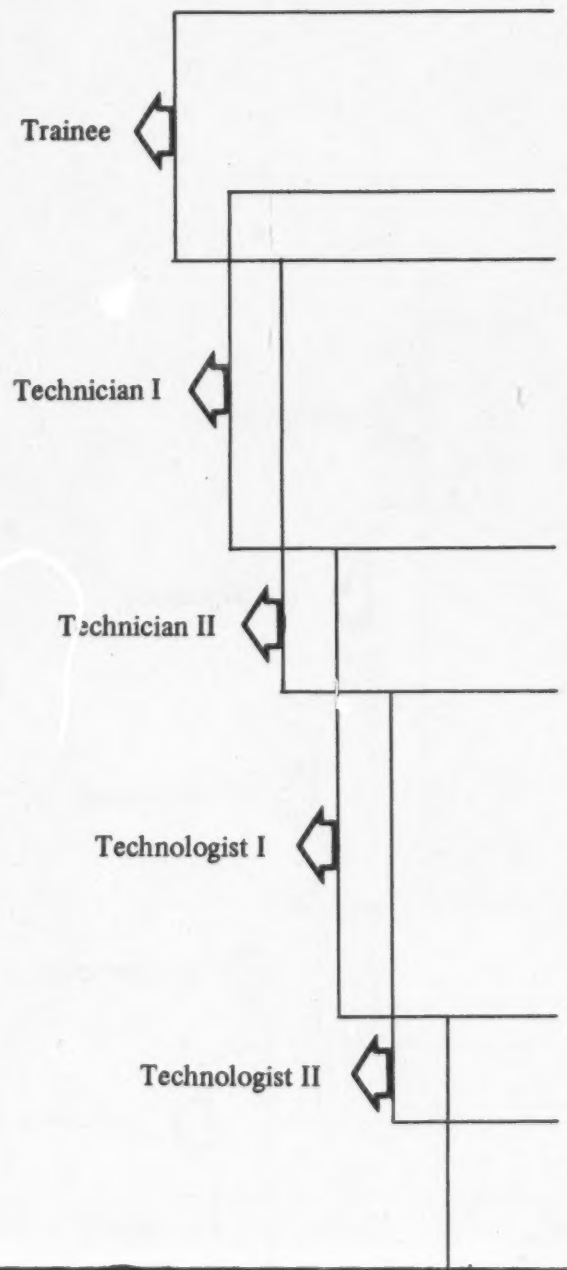
4 Supervising: Determining and interpreting work procedures for a group of workers, assigned specific duties to them, maintaining relations among them, and promoting efficiency.

3 Instructing: Teaching subject matter to others through explanation, demonstration, and supervised practice.

2 Negotiating: Exchanging ideas, information, and opinions with others to formulate concerted policies, programs, or models of action.

1 Mentoring: Dealing with individuals in terms of their total personality in order to advise, counsel, and/or guide them with regard to problems that may be resolved by legal, scientific, clinical, spiritual, and/or other professional principles.

0 Therapy: Administration of various forms of physical or mental assistance through well developed principles, procedures, and techniques.



10 Composing: Judging the readily observable functional, structural, or compositional characteristics (whether similar to or divergent from obvious standards) of Data, People, or Things.

9 Copying: Transcribing, entering, or posting data.

8 Computing: Performing arithmetic operations and reporting on and/or carrying out a prescribed action in relation to them. Does not include counting.

7 Compiling: Gathering, collating, or classifying information about Data, People, or Things.

6 Translating: Placing information into a different language or a more desirable form to facilitate improved communication.

5 Coding: Transferring data and other information into some numerical or pictographic symbolism in order to facilitate swift computation and analysis.

4 Organizing: Bringing together various data, things and/or structures in order to produce some activity or concerted action and attain some definite results.

3 Analyzing: Examining and evaluating data. Presenting alternative action in relation to analysis may be involved.

2 Coordinating: Determining time, place, and sequence of operation or action to be taken on the basis of analysis of data; executing determination and/or

CHART D 2: FUNCTIONS RELATING TO DATA

CHART D 2: FUNCTIONS RELATING TO DATA

Technician I

Technician II

Technologist I

Technologist II

Professional

8 Computing: Performing arithmetic operations and reporting on and/or carrying out a prescribed action in relation to them. Does not include counting.

7 Compiling: Gathering, collating, or classifying information about Data, People, or Things.

6 Translating: Placing information into a different language or a more desirable form to facilitate improved communication.

5 Coding: Transferring data and other information into some numerical or pictographic symbolism in order to facilitate swift computation and analysis.

4 Organizing: Bringing together various data, things and/or structures in order to produce some activity or concerted action and attain some definite results.

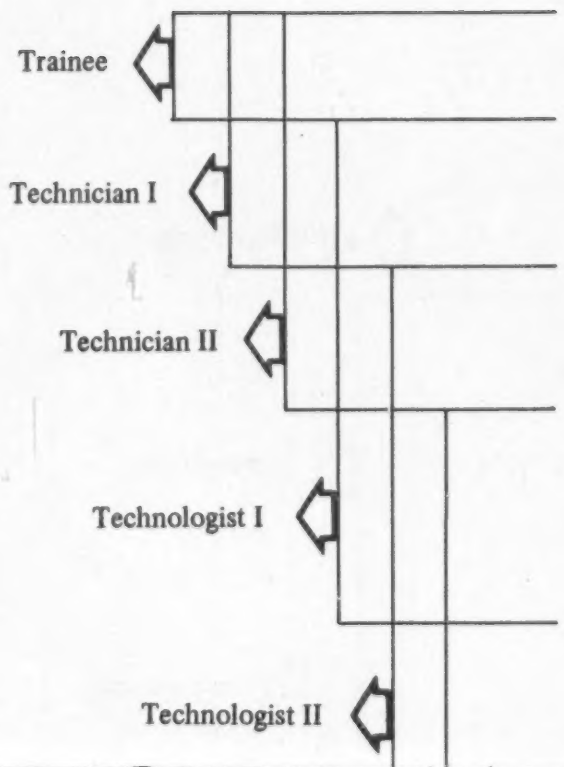
3 Analyzing: Examining and evaluating data. Presenting alternative action in relation to analysis may be involved.

2 Coordinating: Determining time, place, and sequence of operation or action to be taken on the basis of analysis of data; executing determination and/or reporting an event.

1 Planning: Looking into the future; foreseeing needs, services, situations before they arrive and making the necessary arrangements to provide the structures, activities, and things to meet the needs. Providing the direction in which activities, functions, structures are moving.

0 Synthesizing: Integrating analysis of data to discover facts and/or develop knowledge.

CHART D 3: FUNCTIONS RELATING TO THI



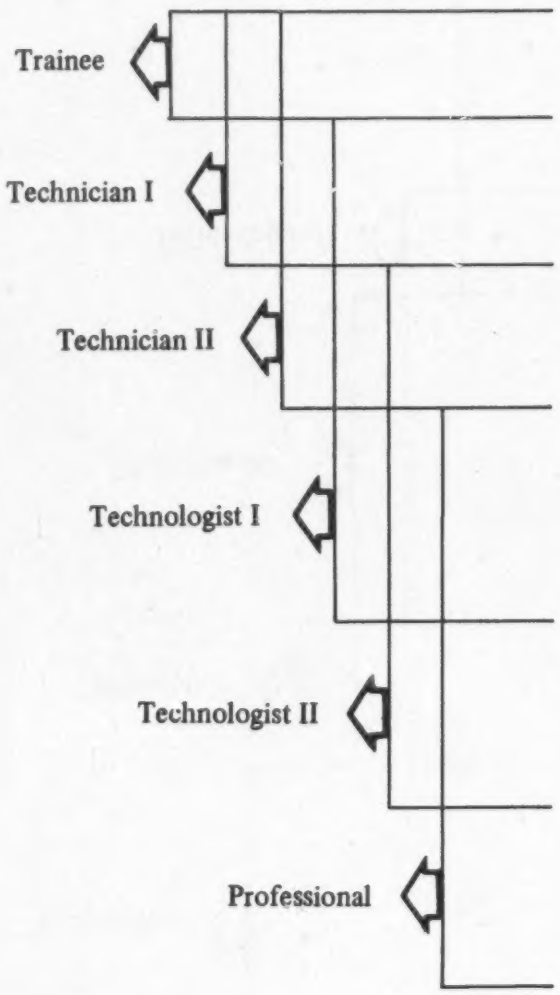
5 Handling: Using body, members, handtools to work, move, and carry objects or materials.

4 Tending: Making adjustments (minor) and checking the operation, condition, and functioning of equipment and situations.

3 Operating-Driving: Guiding or steering various machines or pieces of equipment (cars, buses, etc.). Administering simple devices.

2 Operating-Controlling-Working: Controlling, starting/stopping, supervising the operations of various equipment (Xerox, multilith, typewriter, theropeutic equipment). Administering complex devices.

1 Preparing: Getting equipment ready for use; making connection and adjustments, cleaning, acquiring necessary equipment. Organizing



5 Handling: Using body, members, handtools to work, move, and carry objects or materials.

4 Tending: Making adjustments (minor) and checking the operation, condition, and functioning of equipment and situations.

3 Operating-Driving: Guiding or steering various machines or pieces of equipment (cars, buses, etc.). Administering simple devices.

2 Operating-Controlling-Working: Controlling, starting/stopping, supervising the operations of various equipment (Xerox, multilith, typewriter, theropeutic equipment). Administering complex devices.

1 Preparing: Getting equipment ready for use; making connection and adjustments, cleaning, acquiring necessary equipment. Organizing materials for use.

0 Servicing: Keeping various forms of equipment in working order. Repairing or replacing. Ordering, planning, and scheduling use. Inventing/devising equipment or operations.

Systems Analysis: Other Approaches, Other Uses

The broad field of general systems theory does not have one "absolute" approach to the organization and use of knowledge and behavior. The general concept of systems theory defines an enlarged view of the world and the universe where systems are continually in interaction everywhere. The entire range of complex structures and processes among men and machines, society, nature, economics, needs, and desires can be described as the interplay of systems within systems. The goal of systems analysis development is to make the best use of all this complexity, so that society and individuals are not victimized in the multiplicity of problems and confusions.

> "The systems approach can be reagrded as a disciplined way of using specialists [or anyone trained to do this] in a variety of fields to analyze as precisely as possible sets of activities whose interrelationships are very complicated, and of formulating comprehensive and flexible plans on the basis of the analysis [in] a basic effort to reconcile objectives and resources, to achieve clearly specified compromises between what we want and what we can expect to get...to help people make decisions...the systems approach comes in to provide guidelines and evaluations...The essential power of the approach is that it offers a solid objective foundation for decisions."[6]

Systems theory can be applied in many ways to help make decisions about present and anticipated problems in such areas as pollution, population, traffic congestion, urban blight juvenile delinquency, organized crime, disenfranchised citizenry, inadequate city planning, food and drug misuse, and many others. Each of these areas can be seen as operating within a system, with individual directions and attitudes, with interconnecting dependencies within themselves and with other systems, and with specific characteristics that are either shared or not shared. Without this understanding of operating, interrelated systems, no real and functional problem-solving can take place.

Ludwig von Bertalanffy in his definitive *General System Theory* describes ten approaches that have only recently become reorganized for their ability to control, classify, re-order, and make sense out of information and "systems".[7] Each is based on the concept of *system* as a

"complex of elements standing

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3. Compartment the
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4. Set, graph, and n
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Other Approaches, Other Uses

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"complex of elements standing in interaction "[8]

1. Classical system theory: utilizes classical mathematics, i.e., calculus, to state principles of operation that apply to systems in general, and then to provide techniques for their investigation, description, and possible change (for example, the sutdy of diffusion and diffusion equations in chemistry and physics in relation to the spread of rumors).
2. Computerization and stimulation: systems for exceeding conventional math as well as conventional limitations of human abilities to keep track of multiple variables (for example, the computerization of an imaginary city, a "computer city, represented by a deck of punchcards and desginated to help investigate the long-range effects of new educational programs on an urban community. The model. . .can simulate sixteen years of social change in about four minutes of computing time").[9]
3. Compartment theory: makes analysis possible in cases of three- or multi-compartment systems where there is necessity of defing subunits with certain boundary conditions between which some transfer takes place (for example, organizational chains of corporations and linear bacterial structures).
4. Set, graph, and net theory: although widely separate in form and function, these three are primarily concerned with systems problems involving structural or topologic properties of systems, rather than quantitative relations (for example, the nervous system, megalopolis structures, and interrelationships of magnetic fields).
5. Cybernetics: a theory of control systems based on communication or the transfer of information between system and environment and within the system, and control (feedback) of the system's function in regard to environment (for example, models of regulatory systems, such as hydraulic, electric, physiological, and human engineering systems).
6. Information theory: the use of information or basic knowledge and its organization as a measure of an organization's structure (for example, analysis of non-random amino acids in a protein chain by defining the vocabulary and

grammar of transmission).

7. Automation theory: the notion that anything that is possible logically is able to be automated and done by machine (for example, the production of "test-tube babies").
8. Game theory: concerned with the behavior of supposedly rational players to obtain maximal gains and minimal losses by appropriate strategies against another player or against nature (for example, hypothetical war games, political-economic transactional games, and computerized chess).
9. Decision theory: mathematical theory about rational choices among alternatives (for example, product packaging design, solving psychological interpersonal conflict problems, and some input–to game theory).
10. Queuing theory: concerns optimization of arrangements under crowded conditions (for example, college course registration procedures, dissemination of information to large populations, and crowd or riot control).

The point to be made in such an enumeration is that problems previously thought to be impossible to solve are brought closer to solution through viewing them as a system containing many other systems, interconnecting and influencing each other. Within classifications of concepts in hierarchic order, and the dynamics within that order (where the universe can be seen as a progression from subatomic particles, to the many structures of molecules, cells organisms, and beyond to supra-individual organizations), a systems approach is rooted in reality and through the inter-connection of systems is able to direct organization and decision-making on as many factors as possible.

In an attempt to duplicate the rudimentary structures and processes of organic systems, many man-made systems use input-output of data, internal change to external stimuli, flexibility, and growth or sub-dividing to help solve problems and formulate alternatives to other outmoded ways of doing things. Thus, the format of any systems approach to any kind of problem-solving is based on the configuration of the total universe and all its parts as a system or some form of subsystem. If natural systems function through specific procedures of operation within structures that give to and take from the environment of the other systems, then a

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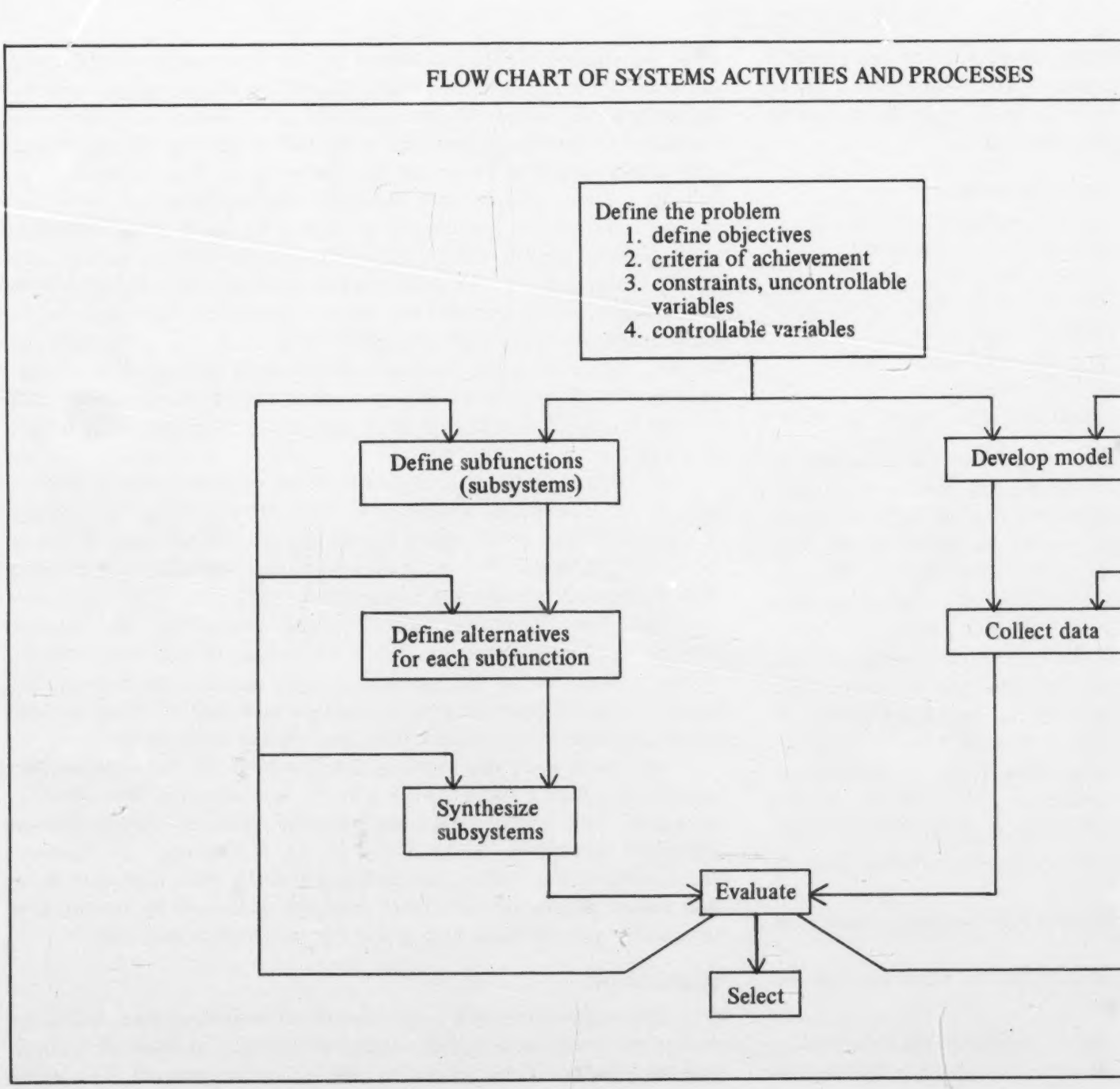
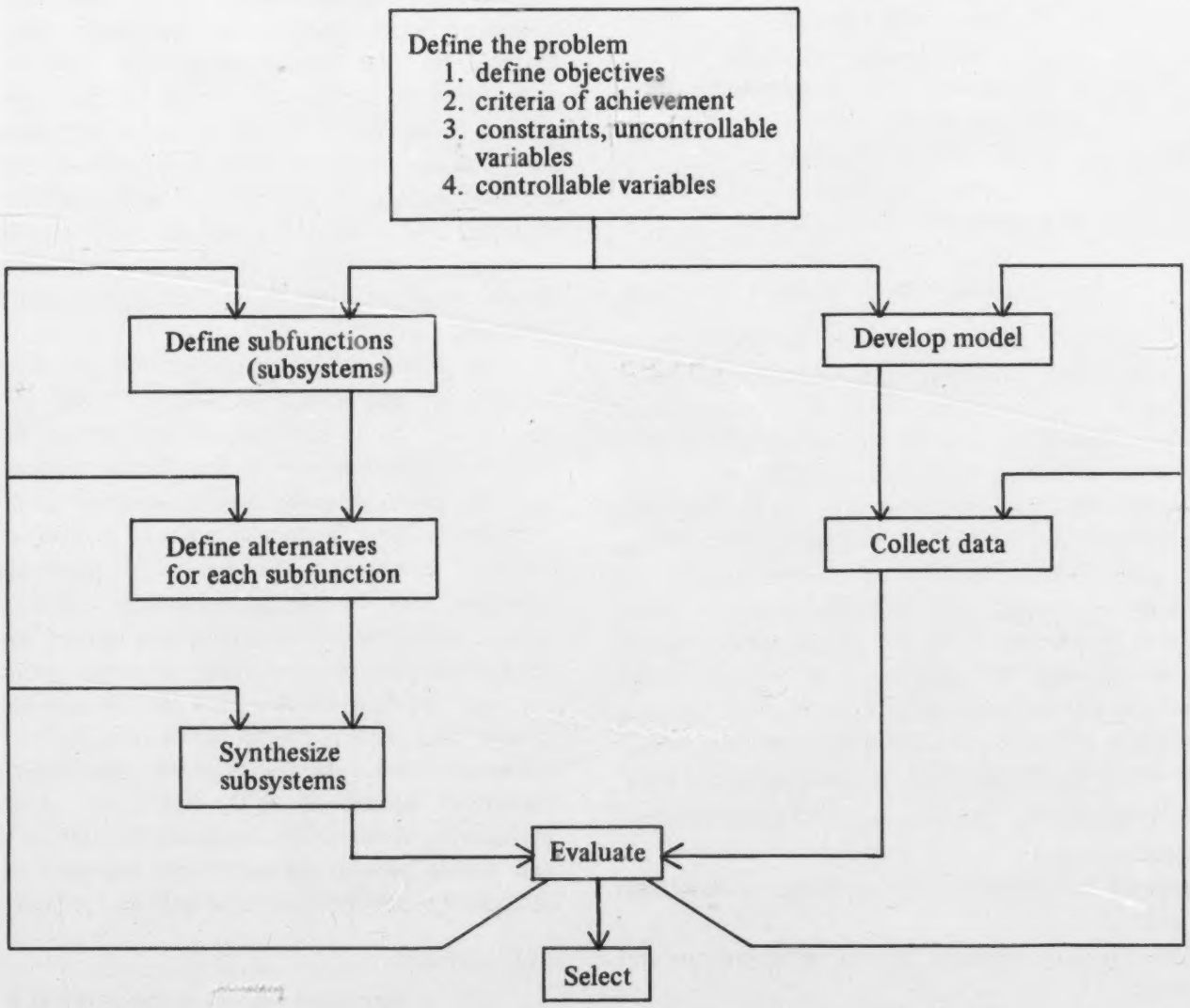
systemic approach to controlling, problem-solving, understanding, and using these natural systems, must adopt systems mechanics and functionings. The following flow-chart clarifies the step-by-step continuity of artificial systems, incorporating these basic system methods: (1) seeking objective of hierarchic priority, with behavioral or operational criteria for achievement; (2) seeking alternative activity for each objective within the range of constraints and resources, both known and unknown; (3) defining specific step-by-step activity for objective-fulfillment; (4) developing a design for continual evaluation of system progress, for feedback and changes in activity as a repetitive process, for maintaining current effectiveness. The accompaning flow chart[10] as a model of a systems approach, once it is static, begins to obsolesce and demands continual re-charting. "An enormous amount of experience and trial and error has gone into the development of such procedures. The critical art in the beginning, Blumstein[11] emphasizes, is knowing where to cut short, where to avoid side issues and bring your thinking to bear on the really important and interesting controllable variables. These variables are our levers on the real world; we can first manipulate them in our model world and see what happens. Then we are better prepared to organize the real world and make things there. We are creating structures."[12]

Thus, it can be seen that systems approaches need not be restricted to their first uses by the Defense Department and war industry to raise standards of production and efficiency, nor to the study and analysis of single system problems. Current systems research in education utilizes various approaches throughout the entire range of educational restructuring, from developing single courses to planning optimum use and growth of entire learning-teaching-research communities. Differential training and utilization of educational administration and the evaluation of teaching techniques are studied. Speagle[13] states some other examples, as well as tentatively lists the components of education which are intimately involved through systems analysis. The simple example of optimizing a child's learning can branch into studies of nutrition, parental harmony, foetal position in the womb, degree of discipline, temperature in the classroom, and so on, each of which becomes a significant variable in the learning process. When planning a complete "school system," so many seemingly extraneous inputs must be considered that traditional boundaries and definitions are forced to crumble. Under a "systems

FLOW CHART OF SYSTEMS ACTIVITIES AND PROCESSES



FLOW CHART OF SYSTEMS ACTIVITIES AND PROCESSES



approach," the analysis surveys the entire terrain without preconceived limitations, and examines all major premises. The following is a list of some of the major structural components to be surveyed when systems analysis is applied to problems in the field of education:

1. educational goals and objectives
2. learning theory
3. teaching technology
4. educational testing
5. educational economics
6. teacher training
7. student population
8. school administration
9. education industry
10. educational research
11. national manpower needs
12. student home environment
13. educational politics
14. educational strategy
15. cutlture and society
16. peer group influences
17. family constellation
18. social attitudes towards education

With so many variables and components, a computer is indispensable. Previously, a problem containing many variables was either totally unsolved, or a physical mode of the problem and its surroundings was built. For example, the Indus River in India was slowly seeping into the ground for miles around its banks, creating massive floodings and loss of good farm land to swamps with much attendant suffering and hardship to the inhabitants. At one time, the Army engineers would have built a large (perhaps 200 acres) scale model of the river, with its tributaries and swamps, and through trial and error, might have been able to control a few variables and come up with a solution. With the use of computers, all variables are coded and the computer can, in a matter of seconds, reveal through simulation the effects of various changes. The computer operates the same way in education, where "the systems approach is being used in a variety of different ways and, roughtly speaking, at three different levels:

1. in studies which involve the school systems of entire cities or states, or the entire nation;
2. in studies desgined to understand the workings of individual institutions; and
3. in studies concentrating primarily on individual courses and teaching methods."[14]

Although, as was stated earlier, systems analysis is firmly rooted in reality and as such suggests concrete activities to solving problem., too

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though, as was stated earlier, systems analysis is firmly rooted in nd as such suggests concrete activities to solving problems, too often the suggestions are not carried out by those people, societies, and institutions that could benefit most. "In the last analysis all the scientific ingenuity in the world, all the contributions of modern technology, are nullified in a systems study if that study fails in its essential objective to help achieve positive results in the real world. . . The programs offer benefits to some people, but frequently step on the toes of others, or threaten to, and are accordingly cut down to size. . . . Can analytical techniques be applied specifically to the intense political problems of getting things done?"[15] The total cost of implementing a public project, for instance, must include the cost of reducing oppositon to its implementation. If you are the government, then you really have no worries, for, as in urban renewal, land is easily wrested from owners cheaply. On the other hand, a less well-endowed program might not become functional due to opposition that cannot be appeased due to lack of funds.

It should be stressed, especially in all considerations of systems analysis for educational development, that the one danger of systems theories that is so much feared and so highly criticized, does not even exist. Von Bertalanffy[16] quotes Ruesch, a noted psychotherapist who said that the new cybernetic world is not concerned with people, but with "systems"; man becomes replaceable and expendable, the "human element" is precisely the unreliable component of the cyberneticist's creations. Man, in the Big Systems, is to be–and to a large extent has become–a moron buttonpusher, or a learned idiot highly trained in some narrow specialization, but otherwise a mere part of the machine.

At the base of this view lies the question: are the cyberneticists turning man into a moron, or is man, by not using his own systemic, systematic, and intuitive thinking capabilities pushing himself into an automated breadline? A.D. Hall[17] in *A Methodology for Systems Engineering* states: "Since creative thought is the most important thing that makes people different from monkeys, it should be treated as a commodity more precious than gold and preserved with great care."

Implications

The systems approach as an operational procedure continued to be further evaluated, refined, and expanded by CORD in Phase III research and implementation. However, the systems approach has wider

possibilities than the ones described. As a tool for analyzing and building curriculum, careers, and opportunities, the systems approach can be utilized in many unique ways and situations. Possibilities aimed at the educational and employment objectives listed earlier could be implemented in other occupational fields for more coherent and useful advancements. In education, all courses could be the partial product of a functional task analysis system where course content would be more closely allied to personal student behavior, future goals, and the needs of the school, rather than curriculum development based only on the theorizing of a small group of teachers. Task analysis, in its many variations, could bring class work much closer to real life by presenting learning in an atmosphere of daily practice by doing. Analyzing student and teacher behavior and coordinating it with learning in all the disciplines could result in a school system keyed into the real process of learning that each person accomplishes on his own from the moment of birth. Educational and training institutions utilizing this approach have a clear advantage over the less rational and less systematic approaches to curriculum development.

In employment, the problem of determining the right jobs for the right people could be solved by a task analysis synchronization of jobs with those desiring to fill them. Rather than politics, race, or gender, raw statistical qualifications and requirements in the form of analyzed codes describing interests, temperaments, work functions, general educational development, and so on, would be a primary basis for hiring. The external appearance of credentials, physical characteristics, or political connections could be eliminated by a systems approach to equitable hiring practices, reasonable job descriptions, systematic career growth sequences, and improved personnel changes. The systems approach, as shown by CORD in its Phase I and II analysis and implementation, can lead to a process for restructured jobs that allows greater potential for worker advancement. The systems approach can derive a coherent core curriculum related to the students' present and future lives, to their work experience, and to the expansion of future possibilities in the world of work and leisure.

However, the realization of all that is possible is much more difficult than establishing a small-range experimental success. The technology of data analysis and the whole systems approach requires much more refinement, much more accuracy and objectivity than currently exists. In order to be able to implement any of the above implications on any scale, the basic methodology must have bee without at all depriving human bei aspects, their emotions, or their cap Refinement of the system involves pe of those primarily cerebral operation and planning tasks from the physic mechanical and repetitive task.

Since the basic technology of s stepping up assembly-line productio kinds of refinement necessary for di functions in the human services ha initiating this new field of inquiry work situations in the human service manual labor. The human service vocational and training area that systemization. However, it is unreali limited scope could arrive at all the approach to a solution.

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APPENDIX A: Task Descriptio

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the basic methodology must have been carefully and scientifically derived, without at all depriving human beings of any of their non-measurable aspects, their emotions, or their capabilities to out-perform themselves. Refinement of the system involves perfecting the coding and measurement of those primarily cerebral operations that distinguish a problem-solving and planning tasks from the physical operations that are involved in a mechanical and repetitive task.

Since the basic technology of systems analysis began as a means of stepping up assembly-line production during the Second World War, the kinds of refinement necessary for distinguishing the high-level intangible functions in the human services has only lately been begun. CORD is initiating this new field of inquiry by using task analysis within actual work situations in the human services that involve much more than simple manual labor. The human services field is a large and burgeoning vocational and training area that very much needs clarification and systemization. However, it is unrealistic to assume that a project of this limited scope could arrive at all the answers or even at the only rational approach to a solution.

Since many employers and institutions of learning have not given serious attention to the systems approach, CORD expresses its research in lieu of anything better, and in the hopes that others will join in the search for knowledge and scientific discovery. In a world that prides itself in its expanding technology, its global communications, and its potential for greater achievement, the search for truth in all fields must not be compromised. The challenge of innovative and exemplary vocational-technical education requires an adequate response in the form of actual changes made on a scale that really makes a difference.

> "Persistent unemployment and underemployment of the disadvantaged is incongruous in the face of our urgent need for trained personnel to provide more and better education, health, welfare, and other services, and to cope with our increasingly sophisticated technology."[18]

APPENDIX A: Task Description Samples

BB-001 Checks with the community clinics on the procedures, referra[l] methods, statistics, and follow-ups of patients to insure

	uniformity of standards.
BB-002	Provides counseling support to patients in group therapy to help them make better adjustment.
BB-012	Supervises group therapy sessions to help workers to learn the use of this type of therapy.
BB-003	Makes diagnostic evaluation of applications for hospitalization to determine their needs and how to meet them.
AA-006	Makes out physical therapy schedules for the patients.
E-002	Supervises members in game room to provide leadership and show sportsmanship.
E-002	Teaches rules and techniques of wrestling to develop physical coordination.
E-002	Recruits members from community to join physical health and education programs in order to establish relationships and provide service.
E-002	Opens physical activity rooms for staff and members in order to provide access to facilities.
E-003	Enforces agency rules among gang members to prevent disruption.
A-001	Writes case history information and daily attendance reports on patients records for use in subsequent evaluations.
A-001	Schedules workers for intake duty in order to get the work done.
A-001	Labels complete case history forms with the program that the clients are to attend in order to guarantee client participation.
A-001	Terminates files on all cases that are closed or transferred, in order to provide for proper handling of records (may include consulting with supervisor, if problems occur).
A-002	Makes home visits to observe and evaluate the progress of the clients within the framework of agreed-upon goals.
A-008	Makes home visits to personally communicate with residents who have not responded to letters concerning services available in the mental health center, by trying to educate them in the concepts of mental health, and extending an invitation to come to the center.

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APPENDIX B: Coding System Scales

The following scales are adapted from the publication, "Job Restructuring," prepared by the Wisconsin Occupational Analysis Field Center (December, 1968). The publication was developed by Mr. Harry Nussberger, Job Analysis Supervisor, and Mr. Frank Potts, Research Analyst, under the general direction of Mr. William F. Miller.

In many instances, the coding scales developed by CORD are the result of radical changes in the form of the WOAFC scales, which were used as a general guide and point of departure. These scales have been freely modified to suit CORD's purposes.

Asterisks (*) indicate where CORD has made its own additions or radical alterations. All unmarked items are those extracted substantially unchanged from the WOAFC report. Items marked with a cross (+) indicate modified verions of those in the WOAFC report. The codes are still undergoing modification and further refinement due to new research, new problems, and new uses.[19]

General Education Development (GED)

1. Reasoning Ability
2. Mathematics, Arithmetic, Numbers
3. Language

GED consists of the above listed items. In the design of the GED levels we have taken our most marked departure from the WOAFC Report. We have given more space to the mathematics scales because of basic disagreement with WOAFC mathematical achievement levels. Our language scale is modified to show as nearly as possible logical transition from level to level. We have found the reasoning scale of the GED as listed in the WOAFC to be inadequate for our purposes by not leading to a logical scaling of reasoning ability.

What is proposed, briefly, is to place the reasoning scale of the GED on a more coherent basis. Reasoning in man takes place in terms of various symbols, unless it is the form of reasoning called "intuitive" in which all the intermediates (symbols) are eliminated. The symbols are the carriers of information (data) about reality to the mind, as well as the means by which mental processes are expressed and information extracted from the mind and communicated to others. Furthermore, symbols are the means

whereby reality is manipulated more conveniently in order to provide new information or new relationships for study. The manipulations are governed by various rules or organized into systems. Those functions requiring the greatest knowledge and use of such manipulative systems and greatest facility with symbology (and consequently the data so represented) comprise the highest categories of non-intuitive reasoning ability. There are a set of middle operations conducted upon the symbols or data. These operations are of a setting-up and predigesting variety. Those functions requiring knowledge and facility with these operations comprise the middle ranges of reasoning ability. After data has been treated, understood, and expressed as new information, action proceeds from the data. In addition, prior to the treatment process, certain supportive maintenance functions are required which do not entail treatment of data content in any significant manner. Those functions requiring action proceeding from already treated data or action involving maintenance of data, comprise the lower levels of reasoning ability.

Thus we arrive at three primary levels of reasoning ability: A--the assimilative, interpretive, and judgmental levels; B--the predigesting levels; C--the levels of instructed functions. We call A, B, and C *categories* and we further subdivide them, each into three subcategories (or levels) of reasoning ability: A_1 A_2 A_3 B_1 B_2 B_3 C_1 C_2 C_3. Each higher subcategory assumes the skills of all those placed lower than it within the category. Each higher category assumes the skills of the categories placed lower than it.

Descriptions of Levels of Reasoning Ability Scale

C-1 Simple one or two step operations are performed upon instructions where circumstances of work are non-variable. (Delivers articles, messages; receives, dispenses, loads, unloads, moves people and things; runs machines.)

C-2 Follows complex instructions with variable circumstances of work. (Stocks supplies, checks stores; guards; cleans; works as aide; relays, sorts records; accompanies, brings food; installs simple equipment; runs machines.)

C-3 Supervises or instructs lower C levels as well as coordinates their function with one anothe- and with higher levels of operation.

Supervises for above mentioned
equipment, and people. Controls a
play groups, social activities, life-gua
instructions; repairs simple equipme

B-1 Collects, copies, arranges data o
structure or exiting from it. (Clerk
arranges outings, social functions; re

B-2 Codes, installs sophisticated equipme
and outgoing information, mater
begun. Does computer coding; m
information, tests. (Gives therapy;
mechanic, electrician, carpenter
secretary.)

B-3 Supervises all lower B levels and
information or data is verified, con
and directions issued. Here also, a
Supervises all above. (Runs work
groups; figures costs, taxes, accoun
social workshop; director, groupwor

A-1 Data is translated from language to
Reports or extracts are prepared a
decided upon and designed. Repre
issued. Plans from higher levels c
composer, commercial artist, reader
worker, teacher.)

A-2 Data is subjected to some analysis,
manipulations of a sophisticated
Information is extracted from data
Exploratory operations are carried
are co npleted. (Engineers, chemis
doctors, psychologists, physicists.)

A-3 Final manipulations are performed.
interpreted in a finalized manne
formulated and created. Definitions
supervised. Plans are formulated (P
architect, research scientist.)

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cts lower C levels as well as coordinates their another and with higher levels of operation. Supervises for above mentioned functions by directing goods, equipment, and people. Controls and organizes work teams. (Runs play groups, social activities, life-guards; policies; carries out tactical instructions; repairs simple equipment; runs machines.)

B-1 Collects, copies, arranges data or materials entering into the structure or exiting from it. (Clerks, survey clerks; runs machines; arranges outings, social functions; receptionist, interviewer, cashier.)

B-2 Codes, installs sophisticated equipment; compiles, classifies incoming and outgoing information, material, and people. Computation begun. Does computer coding; makes graphs, charts; processes information, tests. (Gives therapy; repairs sophisticated equipment; mechanic, electrician, carpenter, nurse, technician, musician, secretary.)

B-3 Supervises all lower B levels and C-3 supervisors. On this level information or data is verified, conclusions drawn, decisions made, and directions issued. Here also, any computations are completed. Supervises all above. (Runs work teams; guides work and study groups; figures costs, taxes, accounting; programs computers; runs social workshop; director, groupworker, investigator.)

A-1 Data is translated from language to language, or system to system. Reports or extracts are prepared and issued. Mode of presentation decided upon and designed. Representations of data prepared and issued. Plans from higher levels carried out. (Interpreter, writer, composer, commercial artist, reader, psychiatric social worker, social worker, teacher.)

A-2 Data is subjected to some analysis, calculations, and computations; manipulations of a sophisticated variety are carried out upon it. Information is extracted from data, and new relationships drawn. Exploratory operations are carried out on problems and data. Plans are completed. (Engineers, chemists, mathematicians, statisticians, doctors, psychologists, physicists.)

A-3 Final manipulations are performed. Data analyzed, synthesized, and interpreted in a finalized manner. New ideas and symbols are formulated and created. Definitions are fixed, and all lower levels are supervised. Plans are formulated (Psychiatrist, theoretical scientist, architect, research scientist.)

Descriptions of Levels of the Mathematics/Arithmetic Scale

C-1 Counting: Able to count four significant figures.

C-2 Addition/Subtraction: Conversant with processes of addition/subtraction of whole numbers of all varities.

C-3 Multiplication/Division/Fractions: Know how to multiply/divide whole numbers. Work processes of addition and subtraction on common fractions and decimals.

B-1 Fractions/Multiplication/Division: Know how to multiply and divide common franctions and decimals.

B-2 Percentages/Interests/Compounding tax tables/Charts/Graphs/Algebra: Exponents, logarithms, linear equations, quadractics. Permutations, Combinations,

B-3 Algebra: Fractoring Equations with two/three unknowns. Determinants, matrix algebra, circular functions. Plane Geometry/trigonometry/Probability: Product of probabilities, independent probability.

A-1 Plane Geometry/Analytic Geometry/Trigonometry/Statistics.

A-2 Statistics/Calculus/Differential Equations/Modern Algebra/Vector Analysis.

A-3 Open. Mathematical skills beyond those listed above.

Descriptions of Levels of Language Development Scale

C-1 Writing: Prints simple sentences, names, addresses, and numbers.
Reading: Reads simple sentences. Vocabulary approximately 2,500 words. Reads comicbooks. Compares work similarities.
Speaking: Speaks simple sentences with reasonable word arrangement and delineation of past and present tenses.

C-2 Writing: Writes simple and compound sentences with interior and exterior punctuation.
Reading: Reads compound sentences with understanding. Reads instructions for carrying out designated operations. Knows how to use a dictionary.
Speaking: Speaks clearly with appropriate pauses and emphasis.

C-3 Writing: Writes complex as well as compound sentences, punctuates well, and utilizes perfect and future tenses.
Reading: Reads complex sentence structure with understanding.

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Vocabulary of 5,000 to 6,000 words. Uses the dictionary to look up words.

Speaking: Able to speak as above, but incorporating good conventional usages with all tenses.

B-1 Writing: Writes reports. Prepares schedules. Fills out questionnaires, applications, and other forms.
Reading: Reads magazines, novels, atlases, encyclopedias.
Speaking: Able to give verbal descriptions of a complete nature. Uses good English, with well modulated voice before small audiences.

B-2 Writing: Writes business letters and prepares summaries. Makes use of all parts of speech and punctuation, uses the proper format for preparing work.
Reading: Able to read road manuals, periodicals, etc. Uses a thesaurus and an encyclopedia.
Speaking: Able to give detailed descriptions, instructions and explanations. Can speak fairly well extemporaneously.

B-3 Writing: Writes descriptive essays and expositions.
Reading: Novels, poems, journals, are read with general understanding.
Speaking: Able to speak on a variety of subjects extemporaneously and to engage in dramatics.

A-1 Writing: Writes translation and technical reports. Writes songs and/or poetry.
Reading: Can read material in foreign texts. Reads abstracts, reports.
Speaking: Speaks one or more foreign languages and/or specialized languages for handicapped people or animals.

A-2 Writing: Writes argumentative essays, critiques, manuals, journal articles, and speeches.
Reading: Reads scientific journals, financial reports, and legal documents.
Speaking: Able to discuss or debate. Delivers lectures or highly developed explanations.

A-3 Writing: Writes novels, non-fictional and technical material, symphonic music. Composes journal articles and theoretical works.
Reading: Reads theoretical works (political, social, scientific), non-fiction.

Speaking: Able to speak well before large audiences on a variety of subjects.

Scales Relating to Worker Functions

The worker functions are described as they relate to data, people, and things. The scales have been modified (chiefly by addition) from those indicated in the WOAFC report. The pattern, definitions, and use remain the same as those used in the report. The People and Data scales have been lengthened, whereas the Things scale has been shortened. Asterisks indicate CORD's additions. All crossed entries (+) indicate modifications of WOAFC material. All unmarked entries are the same as those appearing in the WOAFC report.

Use of scales: Three-digit expression.

(1) Compare each task or element with each hierarchy (Data, People, Things), and record the highest relationship for each using the entry number.

(2) Each studied task would have a 3-digit number, one from each hierarchy.

(3) Entries are listed with higher functions having lower numbers. Higher numbers assume lower entries.

(4) Three digits describe work requirements to be filled.

DATA: Information, knowledge, and conception as related to People, Data, or Things. Obtained by observation, investigation, interpretation, visualization, interrelation, and mental creation. It may be written, oral numerical, verbal, conceptual, ideational, visual.

0. Synthesizing: Integrating analysis of data to discover facts and /or develop knowledge.

*1. Planning: Looking into the future; forseeing needs, services, situatuions before they arrive and making the necessary arrangements to provide the structures, activities, and things to meet the needs. Providing the direction in which activities functions, structures are to move.

2. Coordinating: Determining time, place, and sequence of operation or action to be taken on the basis of analysis of data; executing determination and/or reporting an event.

3. Analyzing: Examining and evaluating data. Presenting alternative action in relation to analysis may be involved.

*4. Organizing: Bringing together various c in order to produce some activity or some definite result.

*5. Coding: Transferring data and oth numerical or pictographic symbolism computation and analysis.

*6. Translating: Placing information into a desirable form to facilitate improved co

7. Compiling: Gathering, collating, or c Data, People, or Things.

8. Computing: Performing arithmetic and/or carrying out a prescribed actio include counting.

9. Copying: Transcribing, entering, or pos

10. Composing: Judging the readily obser compositonal characteristics (whether obvious standards) of Data, People, or

*11. Other: List separately.

PEOPLE: Human beings (also animals) dealt

*0 Therapy: Administration of various assistance through well-developed techniques.

1. Mentoring: Dealing with individua personality in order to advise, coun regard to problems that may be resolv spiritual, and/or other professional pri

2. Negotiating: Exchanging ideas, info others to formulate concerted polic action.

3. Instructing: Teaching subject matter to explanation, demonstration, and super

4. Supervising: Determining and interp group of workers, assigning specific relations among them, and promoting

*5. Interviewing: Talking or otherwise co the purpose of extracting informatio generalized circumstance.

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*4. Organizing: Bringing together various data, things, and/or structures in order to produce some activity or concerted action and attain some definite result.
*5. Coding: Transferring data and other information into some numerical or pictographic symbolism in order to facilitate swift computation and analysis.
*6. Translating: Placing information into a different language or a more desirable form to facilitate improved communication.
7. Compiling: Gathering, collating, or classifying information about Data, People, or Things.
8. Computing: Performing arithmetic operations and reporting on and/or carrying out a prescribed action in relation to them. Does not include counting.
9. Copying: Transcribing, entering, or posting data.
10. Composing: Judging the readily observable functional, structural, or compositonal characteristics (whether similar to or divergent from obvious standards) of Data, People, or Things.
*11. Other: List separately.

PEOPLE: Human beings (also animals) dealt with on an individual basis.

*0 Therapy: Administration of various forms of physical or mental assistance through well-developed principles, procedures, and techniques.
1. Mentoring: Dealing with individuals in terms of their total personality in order to advise, counsel, and/or guide them with regard to problems that may be resolved by legal, scientific, clinical, spiritual, and/or other professional principles.
2. Negotiating: Exchanging ideas, information, and opinions with others to formulate concerted policies, programs, or models of action.
3. Instructing: Teaching subject matter to others (also animals) through explanation, demonstration, and supervised practice.
4. Supervising: Determining and interpreting work procedures for a group of workers, assigning specific duties to them, maintaining relations among them, and promoting efficiency.
*5. Interviewing: Talking or otherwise communicating with others for the purpose of extracting information or evaluating a particular or generalized circumstance.

*6. Arranging: Bringing together the necessary ingredients in terms of people, situations, and things to facilitate activities, developments, and interaction.

*7. Observing-Listening: Sitting or being with another person to watch events for purposes of administration of assistance, acquisition of data, or to provide company and understanding.

*8. Checking: Following up operation, frequently routine, for purposes of ascertaining information about the delivery of goods or services, the functioning of people, or the performance of operations.

9. Diverting: Amusing others.

10. Persuading: Influencing others in favor of an object, service, or point of view.

11. Serving: Attending to the needs or requests of people or animals; also, to the expressed or implicit wishes of people. Immediate response.

12. Helping: Attending to the work assignment, instruction, or orders of supervisor. Applies to "non-learning" helpers. No immediate response.

*13. Other: List separately.

THINGS: Inanimate objects having shape, form, and other physical characteristics:

*0. Servicing: Keeping various forms of equipment in working order. Repairing when broken down. Replacing when worn out.

*1. Preparing: Getting equipment ready for use, making connection adjustments, cleaning, acquiring necessary equipment.

+2. Operating-Controlling-Working: Controlling, starting/stopping, supervising the operations of various equipment.

+3. Operating-Driving: Guiding or steering various machines or pieces of equipment.

4. Tending: Making minor adjustments and checking the operation, condition, and functioning of equipment and situations.

5. Handling: Using body members or handtools to work, move, and carry objects or materials.

*6. Other: List separately.

Aptitude Scale

The aptitude scale and definition are the same as those appearing in the WOAFC report. CORD report a number code from 1 required for a given task. indicated below.

0–Not significant.
1–Low (Specific aptitu
2–Medium (Specific apt
3–High (Specific aptitu
found or expec

Numerical ratings are intende by the interviewer. Specifi individual in order to learn o

G Intelligence: General le understand instructions and make judgments. C

V Verbal: Ability to u associated with them a language, to understa understand meanings o information or ideas cle

N Numerical: Ability to accurately.

S Spatial: Ability to co relationships of plane blueprint reading and described as the abili dimensions or to visuali

P Form Perception: Abili pictorial or graphic discriminations and se figures and widths and

Q Clerical Perception: Ab tabular materials. To words and numbers, a computation.

K Motor Coordination: A rapidly and accurately

inging together the necessary ingredients in terms of ions, and things to facilitate activities, developments, n.

ening: Sitting or being with another person to watch rposes of administration of assistance, acquisition of vide company and understanding.

llowing up operation, frequently routine, for purposes g information about the delivery of goods or services, g of people, or the performance of operations.

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nding to the needs or requests of people or animals; expressed or implicit wishes of people. Immediate

nding to the work assignment, instruction, or orders of pplies to "non-learning" helpers. No immediate

parately.

e objects having shape, form, and other physical

eping various forms of equipment in working order. en broken down. Replacing when worn out.

etting equipment ready for use; making connection leaning, acquiring necessary equipment.

Controlling-Working: Controlling, starting/stopping, e operations of various equipment.

ving: Guiding or steering various machines or pieces of

king minor adjustments and checking the operation, l functioning of equipment and situations.

ing body members or handtools to work, move, and or materials.

parately.

scale and definition are the same as those appearing in the WOAFC report. CORD has made one slight modification. In the report a number code from 1 to 5 indicated the degree or level of aptitude required for a given task. We have modified this rating scheme as is indicated below.

0–Not significant.
1–Low (Specific aptitude requirement below average)
2–Medium (Specific aptitude requirement average)
3–High (Specific aptitude requirement higher than found or expected in general population)

Numerical ratings are intended for observational use and quick assessment by the interviewer. Specific capacities and abilities required of an individual in order to learn or perform adequately a task or job duty are:

G Intelligence: General learning ability. The ability to "catch on" or understand instructions and underlying principles. Ability to reason and make judgments. Closely related to doing well in school.

V Verbal: Ability to understand meanings of words and ideas associated with them and to use them effectively. To comprehend language, to understand relationships betwen words, and to understand meanings of whole sentences and paragraphs. To present information or ideas clearly.

N Numerical: Ability to perform arithmetic operations quickly and accurately.

S Spatial: Ability to comprehend forms in space and understand relationships of plane and solid objects. May be used in such tasks as blueprint reading and in solving geometry problems. Frequently described as the ability to "visualize" objects of two or three dimensions or to visualize geometric forms.

P Form Perception: Ability to perceive pertinent detail in objects or in pictorial or graphic material. To make visual comparisons and discriminations and see slight differences in shapes and shapings of figures and widths and lengths of lines.

Q Clerical Perception: Ability to perceive pertinent detail in verbal or tabular materials. To observe differences in copy, to proofread words and numbers, and to avoid perceptual errors in arithmetic computation.

K Motor Coordination: Ability to coordinate eyes and hands or fingers rapidly and accurately in making precise movements with speed.

Ability to make a movement response accurately and quickly.

F Finger Dexterity: Ability to move the fingers and manipulate small objects rapidly or accurately.

M Manual Dexterity: Ability to move the hands easily and skillfully; to work with hands in placing and turning motions.

E Eye-Hand-Foot Coordination: Ability to move the hand and foot coordinately with each other in accordance with visual stimuli.

C Color Discrimination: Ability to perceive or recognize similarities or differences in colors, or in shades or other values of the same color, to identify a particular color, or to recognize harmonious or contrasting color combinations, or to match colors accurately.

Job Environment Scale

The job environment scale describes specific situations relative to a job within which a worker would have to adjust himself and exist. This scale represents a major modification of the WOAFC "Temperaments" scale. CORD has expanded the scale to about the WOAFC size. The scale is intended to be as exhaustive as possible, with each entry representing a specific environment factor. All asterisked entries are those of CORD's own introduction. All crosses indicate modifications of WOAFC scales. Unmarked entries were taken directly from the WOAFC report. Scale use: The letter J (job) was listed with dashed numbers for each entry which applied to the task under study.

*1 Situations entailing a variety of duties; many tasks to perform.

*2 Situations of little change; task fixed, little or no change.

+3 Situations of frequent change; tasks not fixed, great variance.

+4 Situations of repetitive nature.

+5 Situations of short operations in predetermined patterns.

+6 Situations under specific instructions; little room for indepc dent action or judgement.

*7 Situations with few guidelines; great lattitude for individual judgement.

+8 Situations that involve directing, controlling, or planning the activities of others.

+9 Situations involving working alone.

*10 Situations involving working with groups.

*11 Situations involving extracting information from people or other sources.

12 Situations involving influencing pe judgments about ideas or things.

+13 Situations requiring adequate perfo risk.

14 Situations involving evaluatio judgment, or decisions) of inf judgmental criteria.

15 Situations involving the evalua measurable or verifiable criteria.

16 Situations involving the interpretati terms of personal viewpoints.

*17 Situations involving work indoors.

*18 Situations involving work outdoors.

*19 Situations involving assisting others w

*20 Situations involving assisting others problems.

*21 Situations involving transmitting info

*22 Situations involving giving instructio

*23 Situations involving providing suppo others.

*24 Other (List separately).

Interests Scale

This scale has been much modifi WOAFC report, the latter involved ten list were supposed to be opposites. In our arrangement was unproved, and we wer opposing nature of the items listed in most twenty-three items. Our attempt has bee one specific interest in an approximately e in the direction of the social service fields our own additions. All entries bearing cross entries. Interests or preferences for ce situations, or experiences pertain to this recorded with a dashed listing of the L-4-21-22 would be interest scale entries 4

ovement response accurately and quickly.
bility to move the fingers and manipulate small curately.
Ability to move the hands easily and skillfully; to lacing and turning motions.
rdination: Ability to move the hand and foot ch other in accordance with visual stimuli.
: Ability to perceive or recognize similarities or , or in shades or other values of the same color, icular color, or to recognize harmonious or nbinations, or to match colors accurately.

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volve directing, controlling, or planning the

working alone.
working with groups.
extracting information from people or other

sources.
12 Situations involving influencing people in opinions, attitudes, or judgments about ideas or things.
+13 Situations requiring adequate performance under stress and high risk.
14 Situations involving evaluation (arriving at generalization, judgment, or decisions) of information against sensory or judgmental criteria.
15 Situations involving the evaluation of information against measurable or verifiable criteria.
16 Situations involving the interpretation of feelings, ideas, or facts in terms of personal viewpoints.
*17 Situations involving work indoors.
*18 Situations involving work outdoors.
*19 Situations involving assisting others with external difficulties.
*20 Situations involving assisting others with internal and adjustment problems.
*21 Situations involving transmitting information to others.
*22 Situations involving giving instructions to others.
*23 Situations involving providing supporting functions and services for others.
*24 Other (List separately).

Interests Scale

This scale has been much modified over that appearing in the WOAFC report, the latter involved ten listed items arranged in parts which were supposed to be opposites. In our view, the necessity of such an arrangement was unproved, and we were not at all convinced of the opposing nature of the items listed in most pairs. The CORD scale involves twenty-three items. Our attempt has been to make each entry count for one specific interest in an approximately exhaustive list, leaning somewhat in the direction of the social service fields. All entries bearing asterisks are our own additions. All entries bearing crosses are modifications of WOAFC entries. Interests or preferences for certain types of work activities, situations, or experiences pertain to this scale. Scale use: The letter L is recorded with a dashed listing of the particular interest factors, as L-4-21-22 would be interest scale entries 4, 21, and 22.

+1 Interest in activities with things and objects. (Machinist, carpenter, tabulator, stock boy, etc.)

*2 Interest in responsibility. (Supervisor, doctor, officer [military], policemtn, driver, etc.)

*3 Interest in limited responsibility. (File clerk, loader, packager, inductee, etc.)

+4 Interest in business contact. (Executive, manager, financial clerk, etc.)

+5 Interest in technical activities. (Accountant, analyzer, statistician, actuary, electrician, photographer, etc.)

*6 Interest in manipulation of people. (Policeman, group worker, marriage counselor, psychiatric social worker, psychiatrist, commissioned officer [military], advertising creator, etc.)

*7 Interest in working with information and/or data. (Statistician, actuary, accountant, scientist, engineer, clerk, census taker, social investigator, social surveyor, dietician, etc.)

*8 Interest in low-level involvement with people. (Receptionist, guide, guard, usher, cashier, games instructor, coordinator, sales clerk, ticket agent, etc.)

*9 Interest in medium-level involvement with people. (Interviewer, observer, accompanying, testing, occupational therapist, controlling, parole officer, etc.)

*10 Interest in high-level imvolvement with people. (Teacher, counselor, caseworker, nurse, comminssioned officer [military], clergyman, etc.)

*11 Interest in intensive involvement with people. (Actor, actress, clown, acrobat, stuntman, director, musician, singer, cinematographer, photographer, magician, games instructor, game therapist, writer, composer, etc.)

*12 Interest in work with animals. (Animal caretaker, farmer, trapper, veterinarian, zookeeper, naturalist, forest ranger, zoologist, etc.)

*13 Interest in abstract or creative activities. (Theoretical scientist, artist, composer, author, photographer, cinematographer, philosopher, architect, psychiatrist, psychologist, etc.)

*14 Interest in mechanical or practical activities. (Applied scientist, engineer, pilot, mechanic, electrician, carpenter, occupational therapist, pharmacist, doctor, lawyer, nurse, etc.)

*15 Interest in activitie
frogman, astronaut
surgeon, pilot, psyc

+16 Interest in comm
(Radio announcer
commercial artist,
etc.)

*17 Interest in problen
city planner, organ
diplomat, etc.)

*18 Interest in res
theoretician, explo
counselor, doctor,

*19 Interest in contro
military officer,
psychiatrist, social

*20 Interest with a pr
[language], resea
author, cinematog

*21 Interest in plan
counselor, family

*22 Other (List separa

APPENDIX C: Job I

Social Service Trainee

The position of
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the status of Social Ser

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amenable to the utiliza
duties of the Social Ser

st in activities with things and objects. (Machinist, carpenter, tor, stock boy, etc.)
st in responsibility. (Supervisor, doctor. officer [military], mtn, driver, etc.)
st in limited responsibility. (File clerk, loader, packager, ee, etc.)
st in business contact. (Executive, manager, financial clerk, ee, etc.)
st in technical activities. (Accountant, analyzer, statistician, y, electrician, photographer, etc.)
st in manipulation of people. (Policeman, group worker, iage counselor, psychiatric social worker, psychiatrist, issioned officer [military]. advertising creator, etc.)
st in working with information and/or data. (Statistician, y, accountant, scientist, engineer, clerk, census taker, social igator, social surveyor, dietician, etc.)
st in low-level involvement with people. (Receptionist, guide, , usher, cashier, games instructor, coordinator, sales clerk, ticket , etc.)
st in medium-level involvement with people. (Interviewer, ver, accompanying, testing, occupational therapist, controlling, e officer, etc.)
st in high-level imvolvement with people. (Teacher, counselor, vorker, nurse, comminssioned officer [military], clergyman, st in intensive involvement with people. (Actor, actress, clown, at, stuntman, director, musician, singer, cinematographer, grapher, magician, games instructor, game therapist, writer, oser, etc.)
st in work with animals. (Animal caretaker, farmer, trapper, inarian, zookeeper, naturalist, forest ranger, zoologist, etc.)
st in abstract or creative activities. (Theoretical scientist, t, composer, author, photographer, cinematographer, sopher, architect, psychiatrist, psychologist, etc.)
st in mechanical or practical activities. (Applied scientist, neer, pilot, mechanic, electrician, carpenter, occupational pist, pharmacist, doctor, lawyer, nurse, etc.)

*15 Interest in activities of high risk. (Demolitions, acrobat, paratrooper, frogman, astronaut, policeman, youth worker [gangs], prison guard, surgeon, pilot, psychiatrist, spy, soldier, steelmill worker, etc.)

+16 Interest in communications and dissemination of information. (Radio announcer, newsman, reporter, entertainer, social worker, commercial artist, writer, propagandist, politician, therapist, teacher, etc.)

*17 Interest in problem solving. (Architect, scientist [applied], engineer, city planner, organizer, counselor, doctor, consultant, social worker, diplomat, etc.)

*18 Interest in research or discovery. (Scientist-researcher or theoretician, explorer, prospector, social scientist, spy, criminologist, counselor, doctor, etc.)

*19 Interest in controlling activities. (Executive, manager, supervisor, military officer, policeman, politician, propagandist, advertising, psychiatrist, social worker, etc.)

*20 Interest with a preference for interpreting information. (Interpreter [language], research analyst, scientist, critic, artist, composer, author, cinematographer, advertising consultant, psychologist, etc.)

*21 Interest in planning. (City planning, architect, group worker, counselor, family planning counselor, organizer, etc.)

*22 Other (List separately).

APPENDIX C: Job Description Sample

Social Service Trainee

The position of Social Service Trainee is the basic entry level for those persons that have not yet obtained specific skills or extensive experience in the human services field. There are no specific academic requirements or special life experiences required to attain this position beyond the Trainee's manifest interest in human services. This position is a temporary one, and it is expected that the Trainee will progress at least to the status of Social Service Aide.

The primary training emphasis of this position will be to orient the Trainee to various aspects of the agency and to give him assignments amenable to the utilization of his individual skills and interests. The specific duties of the Social Service Trainee may include the following:

1. Provides companionship, comfort, and support for aged or disabled clients.
2. Drives an automobile or truck to deliver bulk literature for distribution or pick-up, and delivers supplies and equipment.
3. Drives a car or bus to take clients to and from the hospital to shop, or to go on outings.
4. Helps load and unload supplies, takes inventory, and distributes them as instructed.
5. Disseminates verbal or written information among community residents.
6. Inventories and stocks a supplyroom.
7. Stores and distributes recreational equipment and supplies.
8. Assists in canvassing an area or neighborhood to inform the residents about agency services.
9. Babysits with children in order to permit clients to go for necessary services in agencies, hospitals, courts, or schools.
10. Assists on outings or at play, in watching groups of children who need no particular specialized care.
11. Makes specific verbal or written reports where requested by the supervisor.
12. Attends staff meetings as an active particpant.
13. Accompanies a client on trips to the hospital and to other community service agencies in order to provide assistance to the client where and when needed.
14. Writes letters for invalids or hospitalized clients or for clients who are unable to write.
15. Serves as translator or interpreter for agency or client, if the trainee speaks another language.
16. Reads stories or plays games with small children.
17. Assists in performing filing duties by alphabetizing materials to speed the filing process.
18. Assists the receptionist by operating the switchboard or answering phone calls.

Social Service Aide (1 year level in AA program)

The position of Social Service Aide is created for those persons who have compieted the first year's social servi employment at this time in lieu of com requirements. The Aide's primary contrib services and information to clients or com do not need intensive or specialized servic the Aide will frequently work in close members in a specialized service area of h the Social Service Aide may include the fol

1. Introduces self to new clients so determines why they have come t complete forms, and refers or e departments within the agency.
2. Makes home visits to see senio individuals, Accompanies senior citiz assist them with transportation di medical supplies.
3. Works with a group work aide to pl for elderly persons.
4. Works with community organizatio to encourage residents to participate or programs, and to obtain informati
5. Assists staff to implement recreatio Tasks may include arranging materia helping individuals learn recreatio records on supplies and attendance.
6. Secures parental permission for ch programs or trips.
7. Attends staff meetings to discuss clients' progress or difficulties. M reports on progress made by clients crises.
8. Makes home visits to establish con and determine if they need assi clothing.
9. Accompanies residents to locate phoning rental offices or reviewing n

nship, comfort, and support for aged or disabled

obile or truck to deliver bulk literature for
-up, and delivers supplies and equipment.
to take clients to and from the hospital to shop,
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nload supplies, takes inventory, and distributes

al or written information among community

cks a supplyroom.
tes recreational equipment and supplies.
g an area or neighborhood to inform the residents
ces.
dren in order to permit clients to go for necessary
, hospitals, courts, or schools.
or at play, in watching groups of children who
specialized care.
rbal or written reports where requested by the

ings as an active particpant.
client on trips to the hospital and to other
e agencies in order to provide assistance to the
hen needed.
invalids or hospitalized clients or for clients who
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r or interpreter for agency or client, if the trainee
guage.
ays games with small children.
ming filing duties by alphabetizing materials to
ocess.
ionist by operating the switchboard or answering

ar level in AA program)

ocial Service Aide is created for those persons who have completed the first year's social service course work and wish to seek employment at this time in lieu of completing the second year course requirements. The Aide's primary contribution is to provide supportive services and information to clients or community residents who otherwise do not need intensive or specialized services from the agency. In addition, the Aide will frequently work in close association with senior staff members in a specialized service area of his choice. The specific duties of the Social Service Aide may include the following:

1. Introduces self to new clients so as to put them at ease and determines why they have come to the agency. Helps clients to complete forms, and refers or escorts clients to appropriate departments within the agency.
2. Makes home visits to see senior citizens and/or bed-ridden individuals, Accompanies senior citizens on medical appointments to assist them with transportation difficulties or the obtaining of medical supplies.
3. Works with a group work aide to plan and implement social events for elderly persons.
4. Works with community organization staff to distribute information, to encourage residents to participate in special meetings, workshops, or programs, and to obtain information on community concerns.
5. Assists staff to implement recreational or arts and crafts programs. Tasks may include arranging materials or equipment for clients' use, helping individuals learn recreational or craft skills, or keeping records on supplies and attendance.
6. Secures parental permission for children to participate in special programs or trips.
7. Attends staff meetings to discuss program changes and reviews clients' progress or difficulties. May be asked to present verbal reports on progress made by clients or to discuss recent community crises.
8. Makes home visits to establish communication with a new family and determine if they need assistance with housing, food, or clothing.
9. Accompanies residents to locate housing, which may include phoning rental offices or reviewing newspaper ads.

APPENDIX D: Core Curriculum

Core Curriculum Outline for Communications in Human Services I

1 Semester 3 Hours Credit

I. Programmed Listening (Xerox Corporation)
  A. Effective listening
    1. Editing mentally as the speaker progresses
    2. Organizing by main points and supporting reasons
    3. Remembering the use of key words
    4. Summarizing and paraphrasing effectively
    5. Breaking through distractions
    6. Note taking
  B. Advanced effective listening
    1. Review
    2. Expanding listening skills
    3. Listening to groups
    4. Note taking and group discussions

II. Forms and Procedures
  A. Interview
  B. Employment
  C. Tax
  D. Welfare
    1. Medicare
    2. Social Security
    3. Public Aid
    4. Other
  E. Medical
  F. Credit
  G. Educational
  H. Referral

III. Report Writing
  A. Purpose
  B. Descriptive reports
    1. Case histories
    2. Progress reports
  C. How to condense material
    1. Summaries
    2. Memos
  D. Evaluations

IV. Media
  A. Purposes
  B. Stencil making
  C. Machines (copy)
    1. Mimeo
    2. Photocopy
  D. Machines (educatio
    1. Tape recorder
    2. Film projecto
      a. Slide
      b. Movie
    3. Phonographs
  E. Narrative writing
    1. Letters
    2. Flyers
    3. News releases
    4. Argumentativ

V. Simple Mathematics
  A. Purposes
  B. Decimal fractions
  C. Percentage
  D. Simple records
  E. Interest and bank s
  F. Verbal problems
  G. Simple statistics

Core Curriculum Outline for Comm

1 Semester 3 Hours Credit

I. Communications Theory
  A. Major purposes
    1. Convey infor
    2. Convey feeli
    3. Establishmer
  B. Background
    1. Self-awarene

Curriculum

or Communications in Human Services I

ours Credit

ening (Xerox Corporation)

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ng mentally as the speaker progresses

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marizing and paraphrasing effectively

king through distractions

taking

effective listening

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histories

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ndense material

mmaries

2. Memos

D. Evaluations

IV. Media

A. Purposes

B. Stencil making

C. Machines (copy)

1. Mimeo

2. Photocopy

D. Machines (educational and entertainment)

1. Tape recorder

2. Film projector

a. Slide

b. Movie

3. Phonographs

E. Narrative writing

1. Letters

2. Flyers

3. News releases

4. Argumentative material

V. Simple Mathematics

A. Purposes

B. Decimal fractions

C. Percentage

D. Simple records

E. Interest and bank statements

F. Verbal problems

G. Simple statistics

Core Curriculum Outline for Communications in Human Services II

1 Semester 3 Hours Credit

I. Communications Theory

A. Major purposes

1. Convey information

2. Convey feelings

3. Establishment of rapport

B. Background

1. Self-awareness

2. Consciousness

C. Process
   1. Verbal
      a. Oral (tone, accent, pauses, mood, words)
      b. Written
   2. Unstructured nonverbal
      a. Facial expression
      b. Posture
      c. Attitude
      d. Appearance
      e. Touch
      f. Pictographic
      g. Timing
   3. Structured nonverbal communication
      a. Audio-visual (film, music, color)
      b. Formal (form, shape, container, package)

D. Problems
   1. Ego defense mechanisms
   2. Conflict resolution
   3. Other

II. Applications
   A. Purpose and areas of use
      1. Use of relationships
      2. Extraction of information
      3. Identification and resolution of problems
         a. Individual
         b. Group
         c. Community
   B. Methods
      1. Discussion
         a. Interviewing
         b. Formal discussion
            1) Instructing
            2) Meetings
         c. Informal discussion
      2. Demonstration
      3. Contact

a. Physical
b. Other

4. Termination of communi

Core Curriculum Outline for Orientation to Hum

1 Semester 3 Hours Credit

I. Development of Human Service in M
   A. Historical background
      1. Ancient
         a. Religious
         b. Secular
      2. European
         a. Poor laws
         b. National insurance
   B. Human service in America
      1. Poor relief
      2. Social Security
      3. Other
   C. Contemporary programs
      1. United States
      2. International
   D. Philosophy

II. Human Services as a Profession
   A. Goals and principles
   B. Schools and training
   C. Language and structure
   D. Working conditions
   E. Compensation
   F. Status role

III. Methods of Human Services
   A. Case work
   B. Group work
   C. Community organization
   D. Other

IV. The Human Service Worker: Role a
   A. Obligations to clients
   B. Obligations to agency

ciousness

al
Oral (tone, accent, pauses, mood, words)
Written
ructured nonverbal
Facial expression
Posture
Attitude
Appearance
Touch
Pictographic
Timing
ctured nonverbal communication
Audio-visual (film, music, color)
Formal (form, shape, container, package)

defense mechanisms
flict resolution
er

nd areas of use
of relationships
action of information
tification and resolution of problems
Individual
Group
Community

ussion
Interviewing
Formal discussion
1) Instructing
2) Meetings
Informal discussion
nonstration
tact

a. Physical
b. Other

4. Termination of communication

Core Curriculum Outline for Orientation to Human Service

1 Semester 3 Hours Credit

I. Development of Human Service in Modern Society
  A. Historical background
    1. Ancient
      a. Religious
      b. Secular
    2. European
      a. Poor laws
      b. National insurance
  B. Human service in America
    1. Poor relief
    2. Social Security
    3. Other
  C. Contemporary programs
    1. United States
    2. International
  D. Philosophy

II. Human Services as a Profession
  A. Goals and principles
  B. Schools and training
  C. Language and structure
  D. Working conditions
  E. Compensation
  F. Status role

III. Methods of Human Services
  A. Case work
  B. Group work
  C. Community organization
  D. Other

IV. The Human Service Worker: Role and Commitment
  A. Obligations to clients
  B. Obligations to agency

C. Obligation to effect social change

V. The Helping Process
- A. Definition
- B. Techinques

Core Curriculum Outline for Community Resources

1 Semester 2 Hours Credit

I. Introduction to Social Service Structure
- A. Purpose
- B. Method
- C. Design

II. Social Service Community
- A. Public agencies
  - 1. Types of agencies
  - 2. Clientele
  - 3. How served
- B. Private agencies
  - 1. Types of agencies
  - 2. Clientele
  - 3. How served

III. Structure of Local Community
- A. Local government (city)
  - 1. Fire Department
  - 2. Police
  - 3. Courts
  - 4. Administrative offices
- B. Local Government (county)
  - 1. County administrative offices
  - 2. County police
  - 3. Institutions & services
- C. Local government (state)
  - 1. Governor
  - 2. Police
  - 3. Courts
  - 4. Administrative offices
  - 5. Institutions & services
- D. School districts

IV. Legal Aspec
- A. Comp
- B. Right
- C. Admi
- D. Basic

V. Consumer S
- A. Right
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- D. Produ
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Core Curriculum Ou

1 Semester 3 I

I. Anatomy
- A. Skele
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Outline for Community Resources

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Courts
Administrative offices
Institutions & services
ool districts

IV. Legal Aspects of Social Service
- A. Complaints
- B. Rights of welfare recipients
- C. Administrative Procedure Law
- D. Basic Civil Rights Law

V. Consumer Service
- A. Rights of consumer
- B. Complaints
- C. Consumer bureaus, agencies, and publications
- D. Product and service investigation
- E. How to buy and budget

Core Curriculum Outline for Human Biology I

1 Semester 3 Hours Credit

I. Anatomy
- A. Skeletal system
  1. Names and functions of major bone structures
  2. Growth and development of bones and related systems
  3. Conditions affecting its functioning
- B. Muscular system
  1. Names and functions of parts and segments
  2. Growth and development of the muscular system
  3. Conditions affecting its functioning
- C. Circulatory system
  1. Names and functions of parts and segments
  2. Growth and development of circulatory and related systems
  3. Conditions affecting its functioning
- D. Respiratory system
  1. Names and functions of parts and segments
  2. Growth and development of respiratory system
  3. Conditions affecting its functioning
- E. Digestive and assimilative systems
  1. Names and functions of parts and segments
  2. Growth and development of assimilative and digestive systems
  3. Conditions affecting its functioning

F. Eliminative system
    1. Names and functions of parts and segments
    2. Growth and development of eliminative system
    3. Conditions affecting its functioning
G. Glandular system
    1. Names and functions of parts and segments
    2. Growth and development of glandular system
    3. Conditions affecting its functioning
H. Nervous system
    1. Names and functions of parts and segments
    2. Growth and development of nervous and related systems
    3. Conditions affecting its functioning
I. Sensory system
    1. Names and functions of parts and segments
    2. Growth and development of sensory and releated systems
    3. Conditions affecting its functioning

II. Human Physiology
A. Mode of development
    1. How the systems interlock and operate together to facilitate growth, good health and action
    2. How the systems may fail in functioning
B. Human body as a biophysical organism
C. Major processes occuring in the body
    1. Conception
    2. Regeneration
    3. Digestion
    4. Elimination
    5. Assimilation
    6. Sensation and thought
    7. Circulation and energy transmission
    8. Respiration
    9. Coordination
D. Disease and health: Multiple systems view
    1. Health defined and explained
    2. Disease defined and explained
    3. Death defined
    4. Stress and its effect on

III. Diseases in Man: Systemic and sym
A. Degenerative diseases: Sympt
    1. Males
        a. Infancy
        b. Childhood
        c. Adolescence
        d. Adulthood
        e. Middle Age
        f. Old age
    2. Females (where differe
        a. Infancy
        b. Childhood
        c. Adolescence
        d. Adulthood
        e. Middle age
        f. Old age
B. Infectious diseases: Symptor
    1. Male (at various stages
    2. Female (at various stag
C. Congenital diseases
    1. Male – cause, course,
    2. Female – cause, cours
D. Poisoning
    1. Types
    2. Symptoms
    3. Emergency measures
E. Accidents
    1. Types
    2. Symptoms
    3. Emergency measures

IV. Treatment of Disease
A. Drugs and surgery
    1. Aims of drug therapy
    2. Aims of surgery and w
    3. Problems encountered
    4. Kinds of drugs

ive system
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ath defined

4. Stress and its effect on health

III. Diseases in Man: Systemic and symptomatic view
- A. Degenerative diseases: Symptoms and affected systems
  - 1. Males
    - a. Infancy
    - b. Childhood
    - c. Adolescence
    - d. Adulthood
    - e. Middle Age
    - f. Old age
  - 2. Females (where different)
    - a. Infancy
    - b. Childhood
    - c. Adolescence
    - d. Adulthood
    - e. Middle age
    - f. Old age
- B. Infectious diseases: Symptoms and affected systems
  - 1. Male (at various stages of growth and development)
  - 2. Female (at various stages of growth and development)
- C. Congenital diseases
  - 1. Male – cause, course, outlook
  - 2. Female – cause, course, outlook
- D. Poisoning
  - 1. Types
  - 2. Symptoms
  - 3. Emergency measures
- E. Accidents
  - 1. Types
  - 2. Symptoms
  - 3. Emergency measures

IV. Treatment of Disease
- A. Drugs and surgery
  - 1. Aims of drug therapy and when used
  - 2. Aims of surgery and when used
  - 3. Problems encountered with drugs and surgery
  - 4. Kinds of drugs

5. Necessity of patient self-knowledge for protection and defense

B. Other types of therapy: Aims and when used
   1. Hormone therapy
   2. Rest therapy
   3. Fast
   4. Exercise
   5. Food

V. Good Nutrition and Good Food
   A. Defined
   B. Usefulness
      1. Maintenance of health
      2. Treatment of disease
   C. Quantities of necessary nutrients
      1. Minerals
         a. What minerals effect
         b. What foods contain them
         c. What destroys the mineral content of food
         d. Where to find the food
         e. References
      2. Vitamins
         a. What are vitamins and their effects
         b. What foods contain them
         c. What destroys vitamins
         d. Where to find the food and vitamins for less
         e. References
      3. Fats, protein, carbohydrates, roughage
         a. What is the proper balance
         b. How to obtain the proper balance
         c. Where can these things be found
         d. What does each do
         e. Which foods are where
         f. Which foods to avoid and why
         g. References
      4. Food preservatives and artificial sweeteners
         a. Why they are used
            1) To prevent spoilage to increase profit

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5. Necessity of patient self-knowledge for protection and defense

B. Other types of therapy: Aims and when used
   1. Hormone therapy
   2. Rest therapy
   3. Fast
   4. Exercise
   5. Food

Good Nutrition and Good Food

A. Defined
B. Usefulness
   1. Maintenance of health
   2. Treatment of disease
C. Quantities of necessary nutrients
   1. Minerals
      a. What minerals effect
      b. What foods contain them
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   2. Vitamins
      a. What are vitamins and their effects
      b. What foods contain them
      c. What destroys vitamins
      d. Where to find the food and vitamins for less
      e. References
   3. Fats, protein, carbohydrates, roughage
      a. What is the proper balance
      b. How to obtain the proper balance
      c. Where can these things be found
      d. What does each do
      e. Which foods are where
      f. Which foods to avoid and why
      g. References
   4. Food preservatives and artificial sweeteners
      a. Why they are used
         1) To prevent spoilage to increase profit
         2) To alter flavor to increase profit
      b. What are they and their effects on the body

VI. Exercise
   A. Defined
   B. Types
   C. Purposes
   D. Usefulness

Core Curriculum Outline for Human Biology II

1 Semester 3 Hours Credit

I. What is Health Care?
   A. Purpose
   B. Necessity
II. Care of Infants
   A. Diaper changing
   B. Bathing
   C. Feeding
      1. Making formulas
      2. Sterilizing utensils
      3. Types of feeding
         a. Bottle
         b. Breast
         c. Spoon
      4. Burping
   D. Holding
   E. Recognizing infant difficulties
   F. Dangers and diagnostic checks
III. Care of Children
   A. Feeding and diet
   B. Cleaning
   C. Affection, warmth, comfort, and play
   D. Taking temperature
   E. Taking pulse
   F. Observing tongues
   G. Urine and stool
   H. Sleep and exercise
   I. Listening to heart and lungs
   J. Administration of medicine

IV. Care of Adults
- A. Diet
- B. Cleaning
- C. Warmth and comfort
- D. Exercising
- E. Diagnostic (checks pulse, temperature, etc.)
- F. Administration of medicine

V. Emergency Care
- A. Broken bones
- B. Fainting or collapse
- C. Hemorrhaging
- D. Burns
- E. Cuts and scrapes
- F. Bullet wounds
- G. Abdominal cramps
- H. Shock
- I. Loss of limb
- J. Loss of blood
- K. Heart attacks and strokes
- L. Epileptic seizures
- M. Hysteria
- N. Poisoning
- O. Fever and chills
- P. Frost bite
- Q. Allergic reactions
- R. Eye and head injuries
- S. Diarrhea

Core Curriculum Outline for Techniques of Organization and Decision Making

1 Semester 2 Hours Credit

I. Organization in Modern Society
- A. Historical organization patterns
- B. Today's complexities
- C. Task specialization
- D. Organization as a social entity

II. Concept of Over-lays
- A. Over-lay on formal structure
  - 1. The job task
  - 2. The sociome
  - 3. The function
  - 4. Decision ove
  - 5. Power over-l
  - 6. Communicat
- B. Organizational des
  - 1. Outline assu
  - 2. Definitions
  - 3. Universality

III. Man, Groups, Institution
- A. Conflict areas
  - 1. Individual
    - a. Person
    - b. Indivi
    - c. Conce
  - 2. Social group
    - a. Conce
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    - d. Group
  - 3. Organizatio
    - a. Conce
    - b. From
- B. Summary

IV. Formal Organization The

V. Authority Policy and Ad
- A. Concept of author
  - 1. Distinction b
  - 2. Top down ve
  - 3. Administrati
- B. Policy in administ

VI. Organizational Techniqu
- A. Group of activities
  - 1. Work divisio
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1. The job task pyramid
2. The sociometric over-lay
3. The functional over-lay
4. Decision over-lay
5. Power over-lay
6. Communication over-lay

B. Organizational design
   1. Outline assumptions
   2. Definitions
   3. Universality of organization

III. Man, Groups, Institutions
   A. Conflict areas
      1. Individual
         a. Personality characteristics
         b. Individual maturation
         c. Concept of role
      2. Social groups
         a. Concept of social groups
         b. Characteristics of social groups
         c. Classification of groups
         d. Group processes
      3. Organization as social institute
         a. Concept of social institute
         b. From structure to institution
   B. Summary

IV. Formal Organization Theory

V. Authority Policy and Administration
   A. Concept of authority
      1. Distinction betwen power and authority
      2. Top down versus bottom up authority
      3. Administrative politics
   B. Policy in administrative concepts

VI. Organizational Techniques Specialized and Work Division
   A. Group of activities as a basic structuring process
      1. Work division in grouping
      2. Basic concept of grouping
         a. Program

b. Purpose
c. Function
d. Processing
e. Geographical or spatial

VII. Organizational Pattern
- A. Nature of organization pattern
- B. Characteristics

VIII. Communication
- A. Communication as structure
- B. Information channel and hierarchy
- C. Information and decision making

IX. Leadership
- A. Function of leadership
- B. Dimension of leadership role
- C. Situational factors in leadership
- D. Leadership styles and organization

X. Decision Making Process
- A. Decision model
- B. Innovative decision making

Core Curriculum Outline for Introduction to Group Process

1 Semester 3 hours Credit

I. The Purpose of the Course
- A. To gain insight into transactions and interactions of people under various emotional circumstances.
- B. To sharpen the skills necessary to deal with the realities of action-oriented feelings and attitudes, both with groups and with the self
- C. To demonstrate and generate new learning in the two-way proposition of the helping profession, i.e., the giving and the receiving of help

II. Definitions
- A. What is a group? What makes up a group?
- B. What kind of subject matter or problem-oriented tasks are carried out in groups?
- C. What are the interactions and the dynamics of those people brought together in groups?

III. Approaches to the S
- A. Orientation - themselves fo
- B. Analysis of gr
  1. Use of a micro- verbal a feedbac will bec
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- C. Research and
  1. Student conduct generate behavio
  2. Use of field pra

IV. Areas of Applicatio
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b. Purpose
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tline for Introduction to Group Process

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ain insight into transactions and interactions of people various emotional circumstances.
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emonstrate and generate new learning in the two-way sition of the helping profession, i.e., the giving and the ing of help

is a group? What makes up a group?
kind of subject matter or problem-oriented tasks are d out in groups?
are the interactions and the dynamics of those people ht together in groups?

III. Approaches to the Study of Group Process
  A. Orientation – to help the group of students to present themselves for behavioral experimentation and analysis
  B. Analysis of group process
    1. Use of first-hand experiences of a basic group process in a micro-lab setting, describing and using such methods as verbal and non-verbal exchange of first impressions and feedback, T-group, role-playing, etc., so that students will become proficient in their use
    2. Discussion and analysis within the framework of the group experimentation to deal with such themes as:
      a. Participation
      b. Cooperation
      c. Aggression
      d. Conflict – resolution
      e. Competition
      f. Cohesion
      g. Likes and dislikes
      h. Power and influence
      i. Pleasures and discomforts
    3. Encouragement of descriptive feedback both as a basic skill in the helping process and within the group experimentation
    4. Encouragement of laboratory training to heighten the creative risk-taking and learning within the context of the group
  C. Research and field work
    1. Students should be encouraged to do library research, to conduct their own group experimentation, and to generate theories for both intra-group and inter-group behaviour.
    2. Use of practical opportunities in work-study setting or field practicum

IV. Areas of Application: In each respective capacity, the worker plays the role of a facilitator, enabler, negotiator, mediator, catalyst, etc. Hence, the general description, he works with groups; attends group meetings; participates in and/or observes group activities; develops

process or task-oriented groups; counsels and guides, plans and evaluates, induces, initiates and educates groups.

Core Curriculum Outline for Social Problems

1 Semester 3 Hours Credit

I. Introduction
   A. Purposes
      1. To gain insight and knowledge into the problems and conflicts arising from deviant behavior, social disorganization, interactions between the individual and his society, and groups with conflicting interests.
      2. To gain practical bases for problem-solving
   B. Definition – What is society?
   C. Perspectives
      1. History and background
      2. Comparative viewpoints and philosophies
      3. Social work in relation to social problems

II. Social Problems
   A. Individual
      1. Bases of problems
         a. Normal and deviant behavior problems and their manifestations
         b. Physical and emotional needs
            1) Safety/security
            2) Acceptance and love/companionship
            3) Status and power
            4) Aesthetic
            5) Health
            6) Idiosyncratic
      2. Problem breakdown
         a. Self-conflict
         b. Conflicts with others: groups, government, individual, institutions
   B. Holistic
      1. Bases of problems
         a. Social disorganization
         b. Societal values and institutions, as reflected in

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2. Problem b
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III. Methods of Solution
   A. Problem-solving
      1. Specific i
      2. Problems
   B. Problem-solving
      1. Knowledg the proble
      2. Counselin
      3. Reference governme
   C. Structures and

IV. Specific Difficulties i
   A. Concept of " created from th
   B. Lack of educati
      1. Fear of a
      2. Incapabil effort, aid
   C. Possibilities of dispensing help

Core Curriculum Outline for An

1 Semester 3 Hours Cre

I. Introduction to Com
   A. Defined
   B. Purpose
   C. Method

II. Black Americans
   A. History
   B. Present status

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Acceptance and love/companionship
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nflicts with others: groups, government,
vidual, institutions

problems
ial disorganization
ietal values and institutions, as reflected in

recurring social problems
c. Groups with conflicting interests

2. Problem breakdown
   a. Conflicts of groups: wealthy/poor; black/white
   b. Conflicts between governments and groups
   c. Conflicts between institutions and groups

III. Methods of Solution
   A. Problem-solving institutions
      1. Specific institutions
      2. Problems they do not solve
   B. Problem-solving technique
      1. Knowledge of problem: ability to identify and define the problem
      2. Counseling and amelioration
      3. Reference to other agencies, i.e., lawyer, hospital, government aide agencies, etc.
   C. Structures and material utilized

IV. Specific Difficulties in Problem-Solving
   A. Concept of "negative spin-off," where a new problem is created from the solution of an old one
   B. Lack of education
      1. Fear of accepting the problems as problems
      2. Incapability of solving problems without time, money, effort, aid, etc.
   C. Possibilities of psychological dependency, necessitating care in dispensing help

Core Curriculum Outline for American Ethnic Groups

1 Semester 3 Hours Credit

I. Introduction to Comparative Cultures
   A. Defined
   B. Purpose
   C. Method

II. Black Americans
   A. History
   B. Present status

C. Specific cultural elements

III. Appalachian Whites
- A. History
- B. Present status
- C. Specific cultural elements

IV. Spanish Americans
- A. History
- B. Present status
- C. Specific cultural elements

V. American Indians
- A. History
- B. Present status
- C. Specific cultural elements

VI. Northern, Eastern, and Southern European
- A. Northern
  - 1. History
  - 2. Present status
  - 3. Specific cultural elements
- B. Southern
  - 1. History
  - 2. Present status
  - 3. Specific cultural elements
- C. Eastern
  - 1. History
  - 2. Present Status
  - 3. Specific cultural elements

VII. Oriental (varies with area of country)
- A. History
- B. Present Status
- C. Specific cutltural elements

Core Curriculum Outline for Human Growth and Development

2 Semesters 6 Hours Credit

I. Introduction and General Overview of Course
- A. Purpose – goals
- B. Basic concepts
  - 1. Basic human needs

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- C. Birt
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III. Infancy
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- B. Firs

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ose – goals
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Basic human needs

2. Physical
3. Intellectual
4. Emotional
5. Social

C. Concept of growth/development differentiation as a function of biological and environmental interaction (Nature-nurture controversy); teachable moment

D. Individual differences

E. Developmental tasks

F. Major stages–overview
1. Prenatal
2. Infancy
3. Preschool
4. Middle (school) years
5. Adolescence
6. Early adulthood (20-40)
7. Middle age (40-65)
8. Late adulthood and old age (65--)

II. Prenatal Period

A. Conception
1. Process of conception
2. Biologically determined characteristics of the individual
   a. Genetics of sex determination, dominant and recessive genes
   b. Mutations – types of inherited disorders

B. Prenatal development
1. Stages
2. Problems of prenatal development, vulnerability to disease of mother, nutritional defects

C. Birth
1. Process
2. Complications and effects

III. Infancy

A. Neonatal period
1. Characteristics
2. Need

B. First 6 months

1. Sequences of behavioral development
   a. Motor
   b. Perceptual
   c. Verbal
2. Conditions necessary for optimal development

C. Six months to one year
1. Sequences of behavioral development
2. Conditions necessary for optimal development

D. Toddler – one to two years
1. Continuation of behavior sequences
2. Conditions necessary for optimal development environmental (social and physical) child care methods (training)

E. Summary of development during first two years and conditions for optimal development
1. Foundations of basic trust
2. Cultural influences in child rearing
3. Basic attitudes for child rearing

IV. Preschool Years (two to five)
A. General norms and stages of:
1. Physical growth
2. Motor development
3. Cognitive development
4. Social development
5. Emotional development

B. Developmental tasks of preschool years
1. Review of tasks accomplished in infancy
2. Acquisition of physical control
3. Communication
4. Understanding

C. Special theoretical approaches to development in preschool years: Freud, Piaget, Montessori, Watkins, Erikson

V. Middle Years (school age)
A. Development
1. General characteristics
2. Physical changes

B. Developmental tasks of middle years

C. Typical problems of d
problems

VI. Adolescence
A. Developmental tasks o
B. Characteristics of adol
C. Physical changes
D. Changing role
E. Adolescent and the fa
clash in values; separat

VII. Early Adulthood
A. Developmental tasks
B. Vocational choice; wo
C. Establishment of fam
marriage; parenthood
D. Community participa
E. Special conditions an
1. Minority group
2. Military service
3. Unmarried pare
4. Physical disabili

F. Summary of stresses
1. Methods of cop
2. Consequences o

VIII. Middle Age
A. Characteristics of this
B. Changing roles
1. Vocational
2. Parental
3. Filial

C. Special situations
1. Marital
   a. Bachelor
   b. Divorce
   c. Widowho
2. Vocational
   a. Unemplo
   b. Disabilit

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cteristics
ges
s of middle years

C. Typical problems of development in the middle years; learning problems

VI. Adolescence
- A. Developmental tasks of adolescence
- B. Characteristics of adolescents
- C. Physical changes
- D. Changing role
- E. Adolescent and the family; changes in family communication; clash in values; separation

VII. Early Adulthood
- A. Developmental tasks – overview
- B. Vocational choice; work and its meaning; varieties
- C. Establishment of family; search for and choice of mate; role in marriage; parenthood; cultural variations
- D. Community participation/social roles
- E. Special conditions and/or situations
  1. Minority group membership
  2. Military service
  3. Unmarried parenthood
  4. Physical disability
- F. Summary of stresses of this period
  1. Methods of coping (defenses)
  2. Consequences of failure to cope

VIII. Middle Age
- A. Characteristics of this period
- B. Changing roles
  1. Vocational
  2. Parental
  3. Filial
- C. Special situations
  1. Marital
     a. Bachelorhood
     b. Divorce
     c. Widowhood
  2. Vocational
     a. Unemployment
     b. Disability

c. Obsolescence
3. Personal
a. Physical illness
b. Mental illness
D. Summary of stresses associated with middle age
IX. Old Age (65 and over)
A. Characteristics of the period
1. Physical changes
2. Mental changes
3. Social/emotional changes
B. Developmental tasks of old age
1. Adapting to increasing restriction of action
a. Physical
b. Vocational – retirement
c. Loss of relationships
d. Mate
e. Friends
C. Death – reactions to concept of death

Core Curriculum Outline for Abnormal Psychology

1 Semester 3 Hours Credit

I. Mental Health
A. Definition
1. Philosophical
2. Functional
3. Social
B. Purpose and goal
1. Purpose
2. Goal
C. Components of mental health
1. Individual
a. Physical
b. Sexual
c. Mental
d. Emotional
2. Social
a. Physical interaction (group, large/small)

c. Obsolescence
3. Personal
a. Physical illness
b. Mental illness
Summary of stresses associated with middle age
ge (65 and over)
Characteristics of the period
1. Physical changes
2. Mental changes
3. Social/emotional changes
Developmental tasks of old age
1. Adapting to increasing restriction of action
a. Physical
b. Vocational – retirement
c. Loss of relationships
d. Mate
e. Friends
Death – reactions to concept of death

m Outline for Abnormal Psychology

3 Hours Credit

l Health
Definition
1. Philosophical
2. Functional
3. Social
Purpose and goal
1. Purpose
2. Goal
Components of mental health
1. Individual
a. Physical
b. Sexual
c. Mental
d. Emotional
2. Social
a. Physical interaction (group, large/small)

b. Emotional interaction (group, large/small)
c. Mental interaction (group, large/small)
D. Psychological testing

II. Mental Diseases and Defects
A. Neuroses
1. Generic definition
2. Neurotic reactions
a. Hysteria
b. Obsession
c. Compulsion
d. Sado-masochism
e. Sexual (hetero & homo)
f. Phobias
g. Amnesia
h. Anxiety
i. Suicide
j. Hypochondria
k. War neurosis
l. Inferiority – superiority
m. Monomaniac
n. Traumatic
B. Functional psychoses
1. Generic definition
2. Functional psychotic reactions
a. Autism
b. Paranoia
c. Schizophrenia
d. Manic depression
e. Involutional melancholia
C. Organic psychoses and epilepsy
1. Generic definition
2. Organic psychotic and epilepsy types
a. Epilepsy
b. Syphilitic psychosis
c. Psychoses due to other infectious diseases
d. Senile psychosis
e. Toxic psychosis

f. Psychoses due to metabolic disease
g. Psych[illegible] due to new growth (tumor)
h. Hereditary psychosis
i. Traumatic psychosis
j. Cerebral arteriosclerotic psychosis

D. Mental deficiency, birth defects, and psychopathic personality
1. Generic definitions (defects and deficiency)
2. Types
a. Mental deficiency
b. Cretinism
c. Hydrocephalia
d. Mongolian idiocy
e. Other
3. Psychopathic states

III. Physiologic Modes of Treatment
A. Electro therapy
1. Defined
2. When used
3. How used
B. Chemotherapy
1. Defined
2. When used
3. How used
C. Surgery
1. Defined
2. When used
3. How used
D. Hydrotherapy
1. Defined
2. When used
3. How used
E. Deprivation and restraint
1. Defined
2. When used
3. How used

IV. Psychological Modes of Treatment
A. Theoreticians and theories
1. Freud
2. Adler
3. Jung
4. Reich
5. Sullivan
6. Horney
7. Rogers
8. Klein
9. Berne
10. Existential
11. Rank
12. Contemporary
a. Black the
b. Far Easte

B. Therapeutic systems
1. Individual
a. Psych oar
b. Client-ce
c. Gestalt t
d. Psychob
e. Characte
f. Psychos
g. Hydroth
h. Experim
i. Condit
inhibitio
j. Directiv
k. General
2. Group
a. Analyti
b. Group-c
c. Psychod
d. Sensitiv
e. Family
f. Didacti

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1. Freud
2. Adler
3. Jung
4. Reich
5. Sullivan
6. Horney
7. Rogers
8. Klein
9. Berne
10. Existential
11. Rank
12. Contemporary
    a. Black theorists
    b. Far Eastern (Zen) theorists

B. Therapeutic systems
   1. Individual
      a. Psychoanalysis
      b. Client-centered therapy
      c. Gestalt therapy
      d. Psychobiologic therapy
      e. Character analysis
      f. Psychosomatic therapy
      g. Hydrotherapy
      h. Experimental therapy
      i. Conditioned reflex therapy and reciprocal inhibition
      j. Directive psychotherapy
      k. General semantics
   2. Group
      a. Analytic group therapy
      b. Group-centered therapy
      c. Psychodrama
      d. Sensitivity
      e. Family therapy
      f. Didactic therapy

Core Curriculum Outline for Creative Activities I

1 Semester 3 Hours Credit

I. Arts and Crafts
  A. Color
    1. Experiments with color
    2. Color wheel
    3. Color mixing guides
    4. Color in pigment
    5. Color schemes
  B. Painting
    1. Tempera
    2. Crayon
    3. Pastels
    4. Introduction to oils
    5. Introduction to water colors
  C. Bulletin Boards
    1. Design
    2. Printing
  D. Drawing
    1. Perspective
    2. Animals
    3. People
    4. Things
  E. Crafts
    1. Elementary projects
      a. Papier-mâché
      b. Prints
      c. Ceramics
      d. Clay
      e. Scrap art
      f. Sculpting
    2. Secondary projects
      a. Paper
      b. Sculpting
      c. Clay
      d. Ceramics
      e. Scrap art
      f. Wood carving

Core Curriculum
1 Semester
I. Dramati
  A. In
  B. Ar
  C. Dr
  D. Ch
  E. Gr
    1.
    2.
II. Music
  A. Ge
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  D. Us
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  E. Da
  F. In

Core Curriculum
1 Semester
I. Nonviol
  A. Pu
  B. Ra
  C. M
II. Self Def
  A. No
  B. M
  C. M
III. Techniq
  A. Ju
  B. Ju
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Core Curriculum
1 Semester

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Experiments with color
Color wheel
Color mixing guides
Color in pigment
Color schemes
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Tempera
Crayon
Pastels
Introduction to oils
Introduction to water colors
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Printing
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Perspective
Animals
People
Things
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Elementary projects
a. Papier-mâché
b. Prints
c. Ceramics
d. Clay
e. Scrap art
f. Sculpting
Secondary projects
a. Paper
b. Sculpting
c. Clay
d. Ceramics
e. Scrap art
f. Wood carving

Core Curriculum Outline for Creative Activities II

1 Semester 3 Hours Credit

I. Dramatic Narrative
   A. Introduction to children's stories
   B. Art of storytelling
   C. Dramatization of narrative stories
   D. Choral work
   E. Group productions
      1. Plays
      2. Mime

II. Music
   A. General introduction to types of music
   B. Singing
   C. Rhythmic activities
   D. Using the media
      1. Phonographs
      2. Tapes, audiovisual
   E. Dance
   F. Instruments

Core Curriculum Outline for Physical Education I

1 Semester 1 Hour Credit

I. Nonviolence – Philosophy
   A. Purpose
   B. Rationale
   C. Method

II. Self Defense (nonviolent)
   A. Necessity
   B. Modes
   C. Methods

III. Techniques of Self Defense
   A. Judo
   B. Ju Jitsu
   C. Karate

Core Curriculum Outline for Physical Education II

1 Semester 1 Hour Credit

I. Low-Level Games
   A. Purpose
   B. Use
   C. Techniques
II. High-Level Games
   A. Purpose
   B. Use
   C. Techniques
      1. Baseball
      2. Basketball
      3. Football
      4. Volleyball
      5. Soccer

APPENDIX E: Core Curriculum Schedule of Courses

The following tables comprise two curriculum schedules which were arrived at as a result of CORD's research. Table 1A represents what the research project would consider the ideai program in terms of the arrangement of courses and time freed for practicum and specialty training. It makes no accommodation to existing systems through inclusion of courses in English and Sociology which are subjects already adequately covered in the courses delineated, although not with customary titles or traditional arrangement of subject matter.

Table 1B represents what the research project would consider an accommodated program adjusted to existing conditions in colleges with a 30 hour liberal arts requirement. The curriculum represents a total of 33 hours due to the necessity of a six hour practicum rather than a three hour practicum. Nevertheless, no program need exceed 30 hours due to the opportunity for specialized course deletion or substitution.

In all cases actual scheduling and titling of courses must depend on the unique situations which exist at individual colleges. Therefore, these plans are to be considered as models rather than as absolute standards.

Table 1A: Two-Year Course Outline for the AA Degree

First Semester
Orientation to Human Service–3 hours
American Ethnic Groups–3 hours
Techniques of Organization an
Psychology 101 (Human Grow
Physical Education I–1 hour

Second Semester
Human Biology I (Principles o
Communication in Social Servi
Social Problems–3 hours
Community Resources–2 hou
Psychology 102 (Human Grow
Physical Education II (Recreat

Third Semester
Human Biology II (Health Car
Abnormal Psychology–3 hour
Group Process–3 hours
Creative Activities I–3 hours
Practicum I–3 hours

Fourth Semester
Elective in Specialty–3 hours
Elective in Specialty–3 hours
Elective in Specialty–3 hours
Creative Activities II–3 hours
Practicum II–3 hours

Table 1B: Two-Year Course Outlin

First Semester
Orientation to Social Services–
Communication in Social Servi
Sociology 101–3 hours
Techniques of Organization an
English 101–3 hours
Physical Education I–1 hour

Second Semester
Human Biology (Principles of
Communication in Social Servi
Sociology 102–3 hours
Community Resources–2 hou

-Level Games
Purpose
Use
Techniques
-Level Games
Purpose
Use
Techniques
1. Baseball
2. Basketball
3. Football
4. Volleyball
5. Soccer

IX E: Core Curriculum Schedule of Courses

following tables comprise two curriculum schedules which were as a result of CORD's research. Table 1A represents what the roject would consider the ideal program in terms of the nt of courses and time freed for practicum and specialty t makes no accommodation to existing systems through f courses in English and Sociology which are subjects already covered in the courses delineated, although not with customary ditional arrangement of subject matter.

e 1B represents what the research project would consider an ated program adjusted to existing conditions in colleges with a beral arts requirement. The curriculum represents a total of 33 to the necessity of a six hour practicum rather than a three hour Nevertheless, no program need exceed 30 hours due to the y for specialized course deletion or substitution.

l cases actual scheduling and titling of courses must depend on e situations which exist at individual colleges. Therefore, these o be considered as models rather than as absolute standards.

wo-Year Course Outline for the AA Degree

ster
n to Human Service–3 hours
Ethnic Groups–3 hours
Techniques of Organization and Decision Making–2 hours
Psychology 101 (Human Growth and Development)–3 hours
Physical Education I–1 hour

Second Semester
Hun.an Biology I (Principles of Health)–3 hours
Communication in Social Services II–3 hours
Social Problems–3 hours
Community Resources–2 hours
Psychology 102 (Human Growth and Development)–3 hours
Physical Education II (Recreation Games)–1 hour

Third Semester
Human Biology II (Health Care)–3 hours
Abnormal Psychology–3 hours
Group Process–3 hours
Creative Activities I–3 hours
Practicum I–3 hours

Fourth Semester
Elective in Specialty–3 hours
Elective in Specialty–3 hours
Elective in Specialty–3 hours
Creative Activities II–3 hours
Practicum II–3 hours

Table 1B: Two-Year Course Outline for the AA Degree

First Semester
Orientation to Social Services–3 hours
Communication in Social Services I–3 hours
Sociology 101–3 hours
Techniques of Organization and Decision Making–2 hours
English 101–3 hours
Physical Education I–1 hour

Second Semester
Human Biology (Principles of Health)–3 hours
Communication in Social Services II–3 hours
Sociology 102–3 hours
Community Resources–2 hours

English 102–3 hours
Physical Education II (Recreational Games)–1 hour

Third Semester

Human Biology (Health Care)–3 hours
Psychology 101 (Human Growth and Development I)–3 hours
Creative Activities I–3 hours
Abnormal Psychology–3 hours
American Ethnic Groups–3 hours

Fourth Semester

Psychology 102 (Human Growth and Development II)–3 hours
Social Problems–3 hours
Creative Activities II–3 hours
Group Process–3 hours
Practicum–6 hours

APPENDIX F: Participant Colleges and Agencies

Agencies

1. Englewood Mental Health
2. Chicago Youth Centers
3. Chicago Commons Association
4. Chicago Committee on Urban Opportunity
5. YMCA of Metropolitan Chicago
6. Youth Action
7. South Suburban Mental Health and Family Service
8. Prairie State Child Development Lab School
9. Jones Memorial Community Center
10. Woodlawn Child Care Center
11. Children's Memorial Hospital
12. Martin L. King Family Service Center
13. Oak Forest Hospital
14. Tinley Park Mental Health Center
15. Senior Citizens Mobile Service
16. Youth Services Division of the Chicago Department of Human Resources

Colleges

1. City Colleges of Chicago (Human Services Institute)
2. Prairie State College

3. Central YM
4. Thornton

Footnotes

1. Fine, Sid the Hum
2. *Ibid.*, pp
3. Fine, Si *Design,*
4. Fine. Me
5. *Ibid.,*
6. Hills, R.
7. Von Ber
8. Von Ber is conc phenom manifest higher various respecti Hills, *op* among
9. Pfeiffer
10. *Ibid.*, p.
11. *Ibid.*, p.
12. *Ibid.*, p. Arlingto
13. Speagle,
14. Pfeiffer
15. Pfeiffer
16. Von Ber
17. Hall, A 1962.
18. Memora Division BR/USD
19. Scales Project

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n Care)–3 hours
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Health
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Association
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ental Health and Family Service
Development Lab School
ommunity Center
Care Center
al Hospital
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l Health Center
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vision of the Chicago Department of

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3. Central YMCA Community College
4. Thornton Community College

Footnotes

1. Fine, Sidney A. "A Systems Approach to Manpower Development in the Human Services." *Methods for Manpower Analysis*, No. 3, p. 27.
2. *Ibid.*, pp. 31-32.
3. Fine, Sidney A. *A Systems Approach to Task Analysis and Job Design*, p. 9.
4. Fine. *Methods for Manpower Analysis*, p. 33.
5. *Ibid.*, p. 33-34.
6. Hills, R. Jean. *Concepts of System*, pp.2-3.
7. Von Bertalanffy, Ludwig. *General System Theory*, pp. 18-23.
8. Von Bertalanffy has another definition (pp. 36-37) "Systems theory is concerned with 'wholeness,' *i.e.*, problems of organization phenomena not resolvable into local events, dynamic interactions manifest in the difference of behavior of parts when isolated or in a higher configuration, etc., in short, concerned with 'system' of various orders, not understandable by investigation of their respective parts in isolation."
   Hills, *op. cit.*, p. 2, defines systems as "interdependencies or order among phenomena."
9. Pfeiffer *New Look at Education*, p. 2, pp. 92-95.
10. *Ibid.*, p. 32.
11. *Ibid.*, p. 38.
12. *Ibid.*, p. 31. Alfred Blumstein of the Institute for Defense Analysis, Arlington, Virginia, through conversation with Pfeiffer.
13. Speagle, Richard E. *Systems Analysis in Education* pp. 1-2, 4-6.
14. Pfeiffer *op. cit.*, p. 83.
15. Pfeiffer *op. cit.*, pp. 145-146.
16. Von Bertalanffy, op. cit., p. 10.
17. Hall, A. D. *A Methodology for Systems Engineering*, Princeton, 1962.
18. Memorandum written by David S. Bushnell, then Director of Division of Comprehensive and Vocational Education Research, BR/USDE/DHEW.
19. Scales by Barry Warren, as described in the Social Service Aide Project Final Report, September, 1969.

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Social Service Aide Project Phase II Proposal, August 29, 1969. Social Service Aide Project Progress Reports, Phase II–I. January, 1970; II. March, 1970; III. June, 1970; IV. September, 1970.

Speagle, Richard E., *Systems Analysis in Education*, Academy for Educational Development, Inc., Washington, D.C., as reproduced by ERIC.

Von Bertalanffy, Ludwig, *General Systems Theory*, George Braziller, Inc., New York, 1968.